



AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, AUGUST 31, 1833.

We have received the Reports of the President and Directors, and Chief Engineer, of the Ithaca and Owego Railroad, which will be published, or at least a part of it, as soon as we can find room for it.

We have also on hand a communication from Mr. Bulkley, in reply to Mr. Boyden, upon the subject of the "Guard Rail," which will also receive attention as soon as other matters will permit.

We are much obliged to E. F. W. for his communication of the 15th inst. It will be found in this number of the Journal. If he can do us the further favor to furnish us with correct drawings of the different inventions of Mr. Fairman, we shall take much pleasure in bringing them before the public, through our *Mechanics' Magazine*, and *Register of Inventions and Improvements*, a work established expressly to aid the cause in which he labors. We are particularly desirous to obtain drawings of his "Reciprocating Rotary Compound Steam Engine," "Machine for making Wrought Nails," and "Rotary Pump."

Communications from Mr. Fairman, or from E. F. W., will find ready access to the Journal or *Mechanics' Magazine*.

We would also call attention to the advertisement of Mr. Fairman, which is inserted to-day, offering for sale his Nail Machine.

TRACK ROADS.—We publish to-day a communication from John S. Williams, Esq., of Cincinnati, Ohio, referring to the communication of Mr. Hartman, published in No. 20 of the Rail-

road Journal, or 20th July last, upon the subject named at the head of this article. It was our intention when we gave Mr. Hartman's communication to the printer, to refer to Mr. Williams' Report upon the same subject, published, with engravings, by us some time previous in the *Mechanics' Magazine*, *New-York Farmer*, and also in this Journal, No. 19, or 11th of May last, (although it seems to have escaped the notice of Mr. Williams,) but from the multiplicity of our engagements it was omitted, as were our remarks upon Mr. Hartman's communication also.

On the receipt of Mr. Hartman's communication we referred to Mr. Williams' Report, previously published, to ascertain how nearly the two plans resembled each other, and found that all the principles embodied in the latter were also to be found in the former, and may be applied to use, probably, with greater effect and at less expense. As to the priority of dates of the two patents, we are unable to speak. That is a matter which may be determined, we should imagine, without difficulty.

WABASH AND ERIE CANAL.—We are gratified to learn by the following extract from the Fort Wayne (Indiana) Sentinel, that the Wabash and Erie Canal, which has been so long delayed, is now in a fair way to be completed.

Indiana, but a few years since uninhabited, except by Indians, is now performing what few of the older States dared, until within a few years, to undertake. She is now making a Canal, which will, in connection with the Wabash River, form the most direct communication between Lake Erie and St. Louis, and the Mississippi and Missouri Rivers. The completion of this Canal will serve only to stimulate the inhabitants of that thriving State to other works of internal improvement. Her Railroads, already chartered, will also be constructed, and others projected from different parts of the State, either to intersect them, or to communicate directly with the Lakes and the Ohio River. The route of this Canal is undoubtedly the most direct between Buffalo and St. Louis, or New-Orleans, and it must become a great thoroughfare of business and travel.

This section, it will be observed by a reference to the map, forms the summit level, and opens,

at seasons of high water, a passage for keel-boats from one route to the other, and of course to the Lake.

WABASH AND ERIE CANAL.—The citizens of Indiana will be glad to learn that this important work is progressing in the most satisfactory manner. Thirty-two miles are now under contract, the whole of which, there is every reason to expect, will be completed by the end of the next year, or early in the following spring. This part of the canal extends from within a mile of the Maumee to the Wabash, at Huntington. Its completion will doubtless be of great benefit to the State: the Wabash river being navigable for keel-boats to this point, at certain seasons of the year, we may then receive a considerable portion of our supplies of provisions from the Wabash country, by this route, instead of being dependent upon a tedious and uncertain land carriage, over roads almost impassable, as at present; and the Wabash merchants can also avail themselves of this route to receive their goods direct from New-York. The site of the Canal has been permanently located as far west as the mouth of the Mississippine, and if the Legislature next winter will act in accordance with the views of the present efficient Board of Commissioners, we have no doubt that the progress of this work will fully equal the most sanguine expectations of its friends.—[Fort Wayne Sentinel.]

Rapid Travelling.—The Locomotive Engine which left Saratoga on Friday at 5 o'clock, P. M., landed the passengers at Schenectady in one hour, two minutes and fifty-two seconds. The time actually consumed in running the distance—23 miles—was, fifty-four minutes and thirty-three seconds: being the quickest trip ever made.

| | | | |
|-------------------------------|-------|------------------|------|
| Saratoga to Balaton, 8 miles, | 17 31 | Detention | 5 7 |
| Balaton to ———— 3 do. | 18 34 | do. | 3 12 |
| ——— to Schenectady, 8 do. | 18 35 | | 8 19 |
| Running Time, | 54 33 | | |
| Stoppages, | 8 19 | | |
| Whole Time, | 62 52 | [Cour. and Eng.] | |

Ten Miles of Paper.—Paper used to be sold by the sheet, the quire, or the ream; but, in "the march of improvement," stationary will not remain stationary, and so it is now sold by measure. The following order was received from a pottery firm the other day. The writer, it will be observed, gives his orders with as much indifference as though they were not at all extraordinary:

Gentlemen—Please to send us ten miles of your best printing tissue paper, in length, six miles to be 30 inches broad, and four miles to be 22 inches broad, to be wrapped on wooden rollers, according to the plan given. The object of having the paper of such great length is, that it may be printed on engraved cylinders, in the same way as calicoes, &c.

On Road Making, with the Use of Timber.
By JOHN S. WILLIAMS. To the Editor
of the American Railroad Journal.

MR. MINOR.—In the last number of your valuable Journal received here, I observe a communication from Mr. Jno. Hartman, of Virginia, in which he professes to be the "inventor of an improvement in road making, in the use of timber." Claiming myself the inventorship of that improvement, I think proper to address the public in general, and Mr. Hartman in particular, through the columns of your paper.

You had the goodness to publish a drawing of the improvement, and extracts from my report on the subject, made in 1831, in your Mechanics' Magazine in April last; will you please to do the public and me the service of transferring that drawing and those extracts into the columns of the Journal?*

That improvement was invented by me previous to April, 1831, in which month I filed a description of it in the patent office. I reported it to the Cincinnati, Columbus, and Wooster Turnpike Company, Dec. 8, 1831, who ordered one thousand copies of the report printed, which was done. They petitioned the Legislature of Ohio for leave to construct their road upon that plan, as it was not recognized in their charter, which was granted by act of Legislature, dated Jan. 19, 1832, a copy of which act I send you. An account of the invention entered into many of the newspapers of the day. Nearly one thousand copies of my report, containing a copperplate engraving of the improvement, were distributed in every state in the Union. Notwithstanding all which, I do not charge Mr. Hartman with a surreptitious use of my discovery. "I [too] have secured a patent right for the use of it, which I will dispose of to companies or individuals upon good terms."

In order to show the public and Mr. Hartman that my patent covers the whole ground assumed in his communication, I will extract from my specification:

"I have invented a new and useful improvement in the construction of roads, whereby some of the advantages derived from railroads are extended to common carriages of burthen or pleasure that travel any road so improved. * * * I lay two continuous lines of timber, or other suitable material, lengthwise on said road, such a distance apart as to form tracks for the wheels of such vehicles as are in general use upon the road so improved. I furrow, gutter, or groove one of these tracks, in order to receive and guide the wheel or wheels of one side of the carriage passing thereon. Those grooves or gutters may be made in the timber or other material—or they may be formed by attaching cheeks or sides to a plain surface.

"These tracks may be bedded or laid in or upon stone, gravel, clay, or any material of which the surface of the road is formed, and the pieces of which they are constructed may be connected by dowels or clamps, or laid upon transverse blocks, or cross-pieces, which may or may not extend from one to the other.

"Where there is much travelling upon a road so improved, I lay two sets, or four continuous lines of tracks, one

* The article here referred to, together with the drawings, were published in the Railroad Journal of the 11th of May last, page 292.

set for the going and one for the returning carriages. I am aware that some of the advantages of such a track road may be gained by laying timber as above, by furrowing, guttering, or rebating both tracks, to guide the wheels, but I prefer to gutter or groove one only."

I believe that Mr. Hartman and the public will at once see that every principle contained in his communication is also in the above extracts. I will go further, and say that I not only invented the plan, but that I can prove that I invented it, in all its parts, more than two years ago, and would long ere this have put it to the test of experiment upon a large scale, had not untoward circumstances prevented it. The graduation and timber are nearly ready for eight miles of it, and in a few days will be in progress of laying.

I am by no means disposed to quarrel with Mr. Hartman, but shall continue to grant rights upon terms which shall satisfy the public that individual aggrandizement was no moving cause of my taking out a patent therefor, cautioning all concerned against acting under an inferior title.

Should Mr. Hartman not be convinced that I have a priority of right in this matter, or fail to convince me that he has, I shall propose to him a reference of the whole matter to men competent to decide between our claims, and that they meet in Washington City sometime during the next session of Congress.

As to my preference for grooving or guttering one track only, it originated in my knowing that a guide for the wheels of one side of a waggon or carriage will in all cases answer as well as a guide for the wheels of each side; besides which, there is a difference of about eight inches in the span of axles as constructed in different states and places. This circumstance influenced me in favor of furrowing or guttering one track only, as, by the other track being left plain, vehicles cannot be injured by binding in the track. Again, in turning out, when one track alone is guttered, one half the labor only is necessary to overcome the obstacle. And further, by carriages entering upon the tracks, one only will be injured, and the jolts be less, where one gutter alone is dropped into. Add to all this, that one gutter will only cost half the amount of two, and I imagine the public will sanction the preference I have given.

As to tying the tracks together in the manner of railroad sills of wood, agreeably to Mr. Hartman's plan, and which is recognized in my patent, I shall not recommend it until experiment shall prove the necessity of it, not only on account of its expensiveness, but because almost every man's experience will convince him that at those intersections of timber against timber, decay will commence. At present I believe that timber well bedded in the road formation will be still enough and last longer, much longer, than for timber to be against timber. Where timbers are spliced, dowels or clamps may be necessary to join them, and where the substratum is likely to be soft, cross-blocks, of such a size as will support the joint, will be necessary.

In respect to forming the groove or gutter in the stick or out of the solid, I prefer it for similar reasons, as I am certain that the timber will be less likely to decay than where, by "attaching cheeks or sides to a

plain surface," furrows or gutters are formed. All holes bored in timber, whether filled with spikes or trenails, and all joints or cracks in timber, should be carefully avoided, if we attend to the durability of it, particularly if exposed to the weather. And further, gutters or guides formed out of the solid will be less liable to derangement than those formed of "attached cheeks or sides," and I question if they will cost more, as laid timber may be ploughed as well as land, and in much the same way, and grooved as boards are grooved, and that by any sufficient motive power.

I hope, sir, that all those editors who have noticed Mr. Hartman's communication will give publicity to the above, as it will be adding interest to a subject of vital importance to the Union, and particularly those districts of it where stone is scarce and timber is plenty. The cheapness of the plan need not be doubted, and the liability of good timber to wear need not be feared, for more than two years of service upon timber here put down, agreeably to Mr. Hartman's proposition, convinces me of this. As to the freedom of timber from decay, where bedded in earth, I cannot ask you to publish so long an article as the investigation of that part of the subject makes in my report above mentioned; but I must crave the favor of you to publish the enclosed certificate of Col. Johnston, received since the report was printed. Col. Johnston was Indian Agent until within five or six years, and subsequently a Canal Commissioner in this state. He is one of the most amiable men of the west.

Yours, truly, JNO. S. WILLIAMS,
Cincinnati, Ohio, Aug. 10, 1833.

CERTIFICATE.

I came into the Indian Department in the service of the United States in Indiana and Ohio, soon after the operations of General Wayne's army had ceased, and the duties of my office frequently led me to travel over the roads, bridges, and causeways, made by the troops and artificers to facilitate the transportation of the munitions of war, and keep up the intercourse between the different stations and garrisons. It is within my recollection, that for upwards of twenty years after the making of those causeways, the timbers in many of them were perfectly sound, and I have no hesitation in saying that there were cases after a lapse of thirty years where they were sufficiently so to sustain the weight of the heaviest laden waggon.

JOHN JOHNSTON,
Formerly Agent for Indian Affairs in
Ohio and Indiana.

Columbus, Ohio, Jan. 12, 1832.

AN Act further to amend the several acts incorporating the Cincinnati, Columbus, and Wooster Turnpike Company:

Be it enacted by the General Assembly of the State of Ohio, that the President and Directors of the Cincinnati, Columbus, and Wooster Turnpike Company, be, and they are hereby authorised and empowered to construct any part of their said turnpike road on the plan of wood tracks, or timber laid lengthwise, on the principle recommended by John S. Williams, Engineer of said Company, in his report, dated December eighth, eighteen hundred and thirty one.

W. B. HUBBARD,
Speaker of the House of Representatives.

WM. DOHERTY,
Speaker of the Senate.

January 19, 1832.

S. Fairman's Rotary Steam Engine, Machine for making Wrought Nails, &c. [Communicated for the American Railroad Journal.]

LANSINGBURGH, Aug. 15, 1833.

DEAR SIR,—Having witnessed, with no small admiration, your untiring industry and zeal in helping forward to the most useful application the mental and physical resources of our country, and particularly in encouraging and bringing before the public the discoveries of mechanical genius, I take the liberty to invite your attention to some of the inventions of SIMON FAIRMAN, of this village, and sending you an advertisement of a machine for making wrought nails of different sizes, which I desire you to insert in your paper and all other suitable publications under your control. I think it is safe to estimate our Simon Fairman one of the most inventive mechanics now living. In the above nail machine he has exceeded many who have before spent years to effect it; but they have been years of toil unrewarded, for their object was not accomplished. Some, whom I have known even distinguished for their knowledge of mechanical philosophy, have attempted and failed. But the above nail machine is by no means the most important of his inventions: the admirers of discoveries in scientific power, or of new applications of mechanical power, are invited to call at Mr. J. Humphrey's machine shop in this village, and view a *reciprocating rotary compound steam engine*, invented and put in operation in this village, which is thought, by those who have seen it and are good judges, destined to take the place of all steam locomotives on land now in use; also, at the same place, may be seen and purchased at a low price, the *reciprocating rotary compound pump*, a new invention, by the same man, and now in use, which offers to the public a convenience not liable to be "out of order" or "frozen up," to which mankind have heretofore been strangers. Also, a *fluting machine* has been invented by said Fairman, which will greatly abridge the manual labor employed in preparing an important part of the machinery used in cotton factories. This last machine was long in successful and useful operation, but was destroyed in the late disastrous fire at Watertford.

Now, sir, it is an act of justice due to such inventive geniuses, who with bold and adventurous canvass dare to sail in unknown oceans, or with equally bold conceptions and courageous daring, venture beyond those bounds which have hitherto limited, circumscribed, confined, and hedged in, the operations of the faculties of other men, to bring them before the public, while living under the most favorable circumstances. It is a small reward for being made the subject of scepticism, criticism, and witticism, of those who, but for the manifestation of a bold and adventurous genius, might have been their friends and helpers.

It is a small compensation for taking the "heirloom of the poets," and all its inconveniences and mortifications, which has almost uniformly been the scourge of discoverers in the field of science and of art, as well as in the field of fancy and imagination. It is but a small reward for being made the victim of the deceptions of those who possess the means of alleviating the sufferings of genius, made to obtain without compensation the benefit of her superior skill,

exertions, and sacrifices, while the possessor of genius is left to go supperless to bed, and his wife and children endure the want of the necessities of life.

I do not say that this is the case of my neighbor, to whose history and circumstances I am a stranger. But if he has not had, or does not have something of this kind to complain of, he will enjoy a happy exemption from the common lot of his fellow adventurers in the same ship, from the days of Copernicus or the Marquis of Worcester to this day. I will, therefore, as one advocate of genius neglected, thank you, friend Minor, to lend a helping hand, to bring into more general notice an inventive genius of no ordinary skill and talent; by inviting the wise and skilful to call at the above named place in this village, and view some of the productions of Fairman's inventive mind and skilful hand, which they will not fail to admire and approve, whatever they may think of their final results.

Yours, respectfully, F. F. W.

P. S.—As soon as possible you may expect a drawing of the steam engine and pump.

INTERNAL IMPROVEMENTS IN VIRGINIA.—It is indeed gratifying to learn that the Petersburg Railroad, in the "Old Dominion," has really produced a spirit of enterprise amongst those who, above all others—the planters, the owners of the soil—are most to be benefited by such works. The great success of that road, as demonstrated below, will unquestionably produce, not only a spirit of inquiry into the immense advantages of such works to those who cultivate the soil, but also a spirit of action, which will ultimately render the Southern States as famous for their high state of cultivation as they now are for the reverse.

We know, from observation, that Virginia possesses superior advantages in the mildness of her climate, great natural fertility of her soil, and numerous rivers, affording an immense water power for manufacturing purposes, over her northern neighbors; and are satisfied that Virginians require only to be made sensible of the effect that an improvement of these advantages will produce upon the value of each man's property, to step forward, with a determination not easily to be diverted from its purpose, and with united effort, undertake—and not only undertake, but also execute—such preliminary works as will naturally lead to the construction of others.

The following statement of the performance of the "Liverpool," locomotive, must be highly satisfactory and gratifying to the friends of Railroads.

To the Editors of the Intelligencer:

GENTLEMEN,—The following account of the performance of one of our engines will, no doubt, interest you and some of your readers.

On Monday last the Liverpool brought in a train, consisting of fifteen cars and one coach, carrying 127 bales of cotton, 364 bushels of wheat, 162 bushels of corn, and about 30 persons, including passengers and agents of the Company. The gross weight in motion may be summed up as follows:

| | |
|---------------------------|-------------|
| Produce and passengers, | 83,620 lbs. |
| Cars, coach, engines, &c. | 67,500 |
| | 151,120 |

or nearly 67½ tons. The weight of produce alone was upwards of 35 tons. This load was put in motion with great ease by the engine,

and on level grades was carried at a speed of 15 miles per hour. It was twice set in motion on ascents of 30 feet to the mile, (on which we had occasion to stop to set down passengers,) and carried up them at a rate varying from 8 to 10 miles the hour.

This is the largest load which has ever been carried on the road at any single time, and when we compare it with the small size of the engine, and consider the various ascents on the Railroad, it may well be called immense. The Liverpool weighs about 5 tons, and has nine-inch cylinders, with a stroke of 18 inches, and drives her four wheels. Her general working pressure is 50 pounds, ranging up to 60, at which the lock-up valve blows off. I add these technical details in order that the performance of this engine may be justly appreciated by professional men.

Our steamboat has arrived at Blakely, and in the course of a few days we will open the road to the Roanoke. Of this desirable event we will of course give due notice through your advertising columns. Yours, respectfully,

HENRY D. BIRD.

Our readers may remember that, during the last winter, the Legislature ordered a survey of the Nottoway River, from its highest navigable point to its intersection with the Petersburg Railroad. We published some weeks ago the report of a party of gentlemen, who had explored the river in a large boat, and whose experiment afforded proof of the entire practicability of removing all obstructions to its navigation. Since that period, an intelligent Engineer has been engaged, under the authority of the Board of Public Works, in making a critical survey of the river, to whose politeness we are indebted for the annexed results of his labors. Mr. Thompson has described so clearly the advantages of this improvement, and the facility with which they may be realized, that we cannot believe that the planters on the Nottoway will any longer hesitate to take the necessary steps to insure the completion of a work in which they have so deep an interest.

PETERSBURG, August 21, 1833.

GENTLEMEN,—It is with pleasure I comply with the request to furnish you with the result of the survey and estimate for the contemplated improvement of the Nottoway River, from the Great Falls to the Railroad, a distance of 66 miles 613 yards: in which distance it flows through one of the richest and most fertile sections of country in the State of Virginia—and from the smallness of the amount required to open a useful navigation, and afford the planters in that section an easy, cheap, and expeditious mode of getting their produce to market, would lead to the hope that the work would be immediately and vigorously commenced, the advantages of which are almost incalculable, when compared with their present tardy mode of transportation over a wretched road, requiring twenty per cent. of the actual value of the article to land it at market.

There are 25 miles of slack-water navigation on the river, occasioned by the different mill-dams, which are probably rather an advantage than an injury, as they back the water over many shoals and falls in that distance. The locks are supposed 60 feet long, 8 feet wide, built of wood—sustained by dry walls, where the strength of the current or other circumstances may render it necessary. They last under ordinary circumstances from 8 to 10 years; when the increased amount of produce will, no doubt, warrant a more permanent structure. The river (independent of the locks in the different dams) will only require cleaning out, and occasionally wing dams to deepen the water on the shoals; the total cost of which is \$29,406.

In a communication from gentlemen above the Forks of Nottoway, they state, that in the event of the river being made navigable, from that section of country alone they can send 2000 hhds. of Tobacco, and 60,000 bushels of wheat. From the forks to the railroad, a distance of 56 miles, there is an exceedingly fertile

country, which would add largely to the above amount—with a yearly increase on the whole amount from the increased facilities of transportation; which would seem to place beyond all doubt a handsome interest on the investment. At the very lowest calculation the saving to the planter will exceed 50 per cent. on the present cost of waggoning his tobacco, and on wheat in a much greater proportion.

Your obt. servant, W. B. THOMPSON.

Whilst upon the subject of the performance of Locomotive Engines, we will add one or two others equally interesting with the preceding, which must certainly convince any one who may have entertained doubts of their ultimately becoming in general use upon all railroads which are now, or may hereafter be, constructed in this country.

The first is from the Baltimore Gazette, and the other from the National Gazette.

LOCOMOTIVES ON RAILROADS.—Every friend of Internal Improvements will be gratified by reading the articles in this day's Gazette—one extracted from the National Gazette, the other from the Petersburg Intelligencer—giving accounts of the performance of locomotive engines on two of the railroads in the United States. We hope, however, that they will not be less gratified to learn, that a comparison highly favorable to American genius, talent, and industry, may be made between the performances of imported engines and those constructed in our own country. We feel it to be proper to draw the attention of the American people—and more especially the people of Baltimore—to this comparison, as we have often heard complaints made of the Directors of the Baltimore and Ohio Railroad, for not importing locomotives from England.

We found, on referring to our files of last July, that the performance of the Atlantic, steam engine, on the Baltimore and Ohio Railroad, will bear a most favorable comparison with the best efforts of the most celebrated English engines on any of our railroads. The Atlantic, it should be remembered, is entirely of American manufacture, both as to construction and design, and can fairly compete, in all the essentials, with the best locomotive of any other country. The following is an extract from the account of her performance, published in this Gazette last July:

The Atlantic has been running continually for the last three or four months, from Baltimore to the foot of the Inclined Planes, a distance of 40 miles, and back again, the same day. Upon this portion of the road, 33 miles are ascending, at various grades, of from ten to forty feet per mile, exceeding, in the ascent, 20 feet per mile, on the average, and the whole forty miles is almost a constant succession of curves, of 400 feet radius, and upwards. Upon this road the Atlantic has drawn, on the outward, or ascending trip, thirty tons, at the least, at the rate of seventeen miles per hour; with only 15 tons, her practical speed exceeds any safe limit on a curved road. The Atlantic has drawn 92 tons on a level, at a speed of nine miles to the hour, and has brought 72 tons from the half-way house, (six miles,) to Baltimore, at a rate of twelve miles to the hour, on the level parts of the road; passing two summits, of 16 feet per mile, for a half mile each, at the rate of six miles an hour. The motion of the piston compared with that of the wheels, or progressive motion of the engine, is as 1 to 54. The fuel employed is Anthracite Coal, which burns without any difficulty, and it is believed with more economy and convenience than any other. The trip, of 80 miles per day, is performed with one ton of it. Although this engine is the first of this peculiar construction, and the first that has completely succeeded in burning the Anthracite, yet—in the small amount of its repairs, and the quantity of work that it is capable of performing—it is believed to be equal, if not superior, to any engine that has yet been made.—[Balt. Gazette.]

From the outset of the discussions and enterprises in relation to Railroads and Locomotive Engines, we have been powerfully struck with the wonderful effects of which they seemed likely to be productive. As the subject has been developed in theory and practice, our attention and imagination have been more and more excited. All the new views and details have deepened and vivified our original impressions. We have so much confidence in American spirit, intelligence, and pecuniary resources, that we feel an assurance that the great railroads undertaken or projected, in different parts of the Union, will be duly accomplished, and realize the expectations of the most sanguine, respecting their various advantages. The moral or political, as well as the physical benefits, to accrue from them, are incalculable.

In the course of the present summer we have had occasion to be frequently in the immediate neighborhood of the Newcastle and Frenchtown Railroad, and to observe closely the management of both steamboats and land conveyance. It has constantly appeared to us so excellent that it must give universal satisfaction. The trip to and from Newcastle is generally effected in two and a half hours; sometimes in two and a quarter, or less. Last week we breakfasted at the Brandywine Springs, between six and seven o'clock; proceeded to Newcastle; reached Frenchtown, in the car line, in less than an hour; arrived at Baltimore at a quarter past two o'clock, and were again at the springs the next day before one o'clock, by the same route, having left Baltimore at six o'clock in the morning. The journey might be called imperceptible, except as to the positive gratifications of the passage. The fare on board of the steamboat is as good and as well served as that of the principal hotels in our large cities, and every attention is constantly paid to the comfort of travellers. If they suffer inconvenience, it must be from their own inobservance of the rules of mutual accommodation and general ease. The information which we casually collected touching the railroad, we now offer to our readers as it was set down in memoranda.

This road has been in operation since the 27th of February, 1832. In September, 1832, locomotive engines were permanently employed on it, and the use of horses for the transportation of passengers entirely dispensed with. The first locomotive used by the Company was called the Delaware, and was used seventy days consecutively without losing a trip, although a considerable portion of the time it conveyed the passengers of two lines per day across the road both ways, sixty-six miles. This fact is striking, in as much as it confutes an erroneous idea, which has obtained too generally in this country, that locomotive engines are frequently disabled, and of course do their work at a great expense. The Company has imported all its engines from England; they are from the factory of the celebrated Robert Stephenson & Co., of Newcastle-upon-Tyne. There are now, and have been all this season, three of them in use on the Newcastle and Frenchtown Railroad; a fourth has just arrived in the ship Delaware, from Liverpool.

The Company was a good deal annoyed, for a time, by the emission of sparks from the smoke-pipes of their engines; but that evil has been entirely overcome by the ingenuity of their engineer, (of locomotive power,) Edward A. Young, a native of Virginia, who has procured a patent for his invention. Thus the great desideratum in this country, of burning wood in locomotive engines, has been attained.

It is estimated that one hundred and fifty thousand persons have been transported across this road since it was put in operation, to not one of whom has the slightest accident occurred; and it is a remarkable fact, that in the whole progress of this work, from the commencement of its construction to the present day, not a single human being has suffered the loss of life or limb.

The arrangements of this Company for the

transportation of their business are nearly perfect. The precision as to time with which the passengers are daily conveyed across their road, is matter of wonder; the variation is rarely, if ever, greater than five minutes—the time fixed being from 55 to 60 minutes: the distance is 16½ miles. Guards are placed along the road at convenient distances, and signal staffs erected, by means of which information can be transmitted from one end of the road to the other in three minutes. This is a great security as well as comfort to travellers; for it is the duty of these guards to keep all horses, cattle, &c. off the road; and in case of detention, from any cause, the telegraphic announcement of it would bring immediate succor. It is believed, however, that, with the exception of a delay caused by a snow storm, there has been but one instance of detention upon this road worthy of being mentioned, and that was when the engine passed over a cow. The recurrence of such an accident—(no injury was sustained even then by any passenger)—is rendered almost impossible by the judicious precautions above mentioned.

A single locomotive has frequently conveyed over this road upwards of two hundred passengers, with their baggage. The train of cars is often thirteen or fourteen in number, and the sight of them all in motion, conducted by the gallant little steamer, is highly picturesque and interesting.—[National Gazette.]

A Treatise on Railway Improvements. By RICHARD BADNALL, Esq. London, Sherwood & Co.

The volume now before us is of the argumentative kind, recommending the author's invention; and at p. 31, he thus describes his ideas on the subject: "The improvements in the formation or construction of railways, to which these pages principally refer, is the substitution of a curved or undulating, or, what I denominate, a 'serpentine railway,' for the horizontal railway now in use. The impressions upon my mind, before the trial of any experiments, were, that by an undulating railway a greater resistance would be opposed to the power of steam, or any other locomotive power, than upon level railway; that much would be gained by the power of gravity multiplied by active power down a descent; and that, consequently, a locomotive engine of any power would travel at a greater speed, or drag a greater weight, than upon a horizontal railway." Such, then, is the proposition of the author, and we do not doubt that our readers will join us in expressing surprise at an invention so widely differing from all preconceived notions. In our early youth we were taught that the shortest distance between two points was a straight line; and further, as a continuation of the same proposition, that the two sides of any triangle are greater than the third. Mr. Badnall will therefore attribute the ignorance we display, in not conforming to his views, to our early education, and not to prejudice of any other kind. But to return to the subject: in p. 52, the author gives an account of a first experiment, by which he attempts to prove the utility of his invention. "I had (he says) a curve made of the following proportions: from A to B was four feet, depth of curve 2 inches; a is a roller, so constructed as to move easily along the curve, and to revolve upon its axis, to each end of which was attached the string s, which passes over a pulley at the opposite end, and a weight was attached to the string to propel the roller. The curve, it should be stated, was formed on a solid piece of wood, so that by turning it over it would be a horizontal surface of 4 feet.

"The following experiments were made

with different weights, just sufficient to move the roller along the surface when perfectly horizontal and at different inclinations.

| Inclinations. | Over the horizontal plane. | Over the curve. |
|---------------------------------|----------------------------|-----------------|
| On a perfect level | 2½ sec. | 1½ sec. |
| Rise of 3 in. in 48 in. | 3 | 2 |
| " 4 in 48 | 5 | 2 |
| " 2 in 48 | 5 | 2 |
| " 6 in 48 | 6 | 2½ |

"Thus showing that the greater the angle of the incline the longer was the time required in passing along the plane; whilst on the curve, the same exact weight being employed at each experiment, the speed scarcely varied, and at all times was considerably greater than upon the horizontal plane." We have taken the liberty of putting parts of this quotation in italics, because we consider they answer the proposition of the author. We grant the results to be sufficiently correct for argument, though they cannot be mathematically true; and we should have been surprised had they been much otherwise. But let us take experiment by experiment: first asking why he tried inclined planes against inclined planes? because his proposition is undulating railways in opposition to level or horizontal planes. In the first experiment, on a level 48 inches long, the roller was by a certain weight drawn from end to end in 2½ seconds, whilst by the same weight the same roller on the curve was drawn 48 inches in 1½ seconds, it will be evident that the roller in descending the first half of the curve would quickly get up its momentum, as would also the weight, whilst on the level plane the length of run would not more than admit the roller to arrive at its velocity; consequently this was by no means a fair trial. If the author had made a rail of 48 inches long, commencing with an inclination for the first 24 inches, the extent of rise being 2 inches, and then a descent of another 24 inches—this, if his proposition has any thing in it, would have been a more fair trial; the weight would cause the roller first to ascend 24 inches and descend the next 24 inches; and if, with such an arrangement, it had been discovered that the space of 48 inches was travelled in a less time than on a horizontal plane, we should be really inclined to look more seriously into the subject. Again, it will be seen in the second experiment, that of raising the level plane 3 inches at one end, which would produce an inclined plane of 3 inches in 48, whilst, on the other hand, in raising the curved surface 3 inches, the first half of the run would be very nearly on a level plane, and thus enable the roller to get up a momentum to meet the other half of the run, which would be an inclined plane of about 5 inches in 24; and such may be said of the other experiments of raising one end 4, 5, and 6 inches. It may be said of all the experiments described, that the length of the level plane is in no instance of sufficient length for the carriage or roller to get up its velocity till nearly to the end, whilst the carriage on the undulating road would get up its velocity by descending the first inclination. In making experiments either with a carriage or with boats, it is usual to commence marking time considerably after the same has started, so that it may be fairly considered to have got up its velocity; and had such a course been pursued in these experiments, very different results would undoubtedly have taken place. Thus, for instance, if the undulating road be 100 feet, and the horizontal plane be 100 feet,

the speed or time ought not to be noticed till the carriage had travelled 40 or 50 feet; for the time of running of the carriage on the respective road should be only compared for the last 50 or 60 feet. In page 87, a quotation is given from Mr. Wood's admirable work on Railroads. The present author states that Mr. Wood (p. 202, second edition) calculates the resistance up a plane to be a given amount, say 56, and down the plane a given amount, say 22, and then draws his mean resistance or friction upon a level plane 39—thus:

$$\frac{56+22}{2} = 39$$

Mr. Badnall disputes this calculation of Mr. Wood, and states that the two powers of resistance added together and divided cannot show the mean resistance; he then says, "*I name this, because it particularly bears upon the principle on which I found my improvements; for if Mr. Wood be correct, it appears to me impossible that any advantage could accrue from the adoption of a curved or undulating line of road.*"

We finish our remarks with this last quotation, because it clearly expresses our opinion.—[Repertory of Arts.]

PATENT TINNED LEAD PIPES.—An article under this name is mentioned in the London papers, which seems likely to supercede the use of all other metals which hitherto have been employed for conduits. To lead alone, in pipes, cisterns, &c. it is well known that the most serious objections exist. For instance, the action of air on lead produces oxide, which water dissolves, and thus water becomes poisonous. Similar deleterious effects are caused by leaden pipes in beer engines. It was to remedy these evils that the new process of tinning lead pipes was brought to perfection, and Messrs. J. & R. Warner, the patentees, affirm that the additional cost for the improved article is very trifling.

AMERICAN IRON.—It has been a study much attended to of late, to know the character of American and foreign iron, compared with each other.

The consumption of iron in the shape of boiler plates, and cast rails, is becoming enormous. The tenacity and character of the metal are yet to be thoroughly understood. The Baltimore iron is considered the best in the world for steamboats. As yet we do not fabricate wrought iron rails, but probably very soon shall, as machinery will be contrived to equalize the difference between the prices of American and English iron. Cast iron rails have been made with success at our own furnaces.

The American iron being melted by the heat of charcoal is allowed to be more tenacious than the English, which is melted by coke.

To put the matter completely at rest, however, very interesting experiments have been made at the apartments of the Franklin Institute, under the direction of Mr. Johnson, a scientific gentleman. The Secretary of the Treasury was authorized some years since, by an act of Congress, to expend a certain amount in constructing machines to make experiments on the tenacity of iron and other metals used in steam boilers. It was so constructed as to admit any degree of temperature up to 500 degrees Fahrenheit. Some interesting results have thus been

obtained. The Pennsylvanian, who is our authority for the assertion, says it is ascertained that the tenacity of good iron is increased by the application of any degree of heat under 450 degrees, which is contrary to previous entertained opinions. Some Tennessee iron (from the Cumberland works) was found equal to a resistance of from 69,000 to 64,000 pounds the square inch! The Pennsylvania and Connecticut iron exhibited the same qualities. No iron from our state was sent on for trial. We hope some of our proprietors of forges will not forget to submit specimens of their iron to the test of these experiments.

It was also found that common American iron was better than the best British, and the best American equal, and generally superior, to Swedish and Russian.—[Albany Daily Advertiser.]

WONDERFUL INVENTION.—A watchmaker of the name of Buschmann, living at Elsenburg, not far from Attenburg, in Saxony, has contrived a piece of machinery, which, without the assistance of steam, has been found strong enough to move a heavily laden wagon, placed in a fresh ploughed field, with the greatest ease, although sixteen horses could not stir it. The machine may be easily handled, and the vehicle moved by it most safely managed. The inventor has been offered \$200,000 for the secret; but as he had obtained patents from all the principal German governments, he has refused all offers.—[Danville Reporter.]

NEW INVENTION.—A gum elastic cloak, lined with silk, has been invented in Baltimore. It is intended to be thrown over the shoulders in wet weather, and will effectually shield the person and clothes of the wearer. When not wanted, it can be folded up into a very small bulk, and, on this account, must be found very useful and convenient. We mean to have one ordered on for our own use, so as to be ready for the next fall elections.—[Cin. Rep.]

CUT FLOWERS.—To more conveniently enjoy the sight of flowers, they are often plucked and placed in jars of water in the dwelling. By changing the water, or adding alkalies every day, they may be perpetuated without fading for many days, even to the period of falling from the parent stem. Lime, magnesia, or soda, may be used in moderate quantities, such as to give natural sustenance to the detached shoots in preservation. They may be made a luxuriant and appropriate ornament to the drawing-room or parlor; and in the more humble dwelling of the laborer, how cheerful appears the white-washed room and broad fire-place,

"Whose hearth, except when winter chills the day,
With aspen boughs, and flowers, and fennel gay,"
throws out its soft perfume to the air.—[Ulmus.]

NEW PADDLE WHEEL.—A model of a newly invented paddle wheel for boats, which avoids the lifting of water, as in ordinary paddles, is now to be seen in the Hall of the Franklin Institute, Philadelphia. The inventors say that these paddles are brought into the water less obliquely than the common kind, and from the time they are vertical with the axis of the wheel retain a perpendicular position, until they are out of the water. This result is alleged to be the effect of a simple contrivance. The machine may be constructed of any requisite strength.

Babbage on the Economy of Manufactures.

(Continued from page 504.)

181. Some farther reflections are suggested by the preceding analysis; but it may be convenient, previously, to place before the reader a brief description of a machine for making pins, invented by an American. It is highly ingenious in point of contrivance, and, in respect to its economical principles, will furnish a strong and interesting contrast with the manufacture of pins by the human hand. In this machine a coil of brass wire is placed on an axis; one end of this wire is drawn by a pair of rollers through a small hole in a plate of steel, and is held there by a forceps. As soon as the machine is put in action—

1. The forceps draws the wire on to a distance equal in length to one pin: a cutting edge of steel then descends close to the hole through which the wire entered, and severs a piece equal in length to one pin.

2. The forceps holding the wire moves on until it brings the wire into the centre of the *chuck* of a small lathe, which opens to receive it. Whilst the forceps returns to fetch another piece of wire, the lathe revolves rapidly, and grinds the projecting end of the wire upon a steel mill, which advances towards it.

3. After this first or coarse pointing, the lathe stops, and another forceps takes hold of the half-pointed pin, (which is instantly released by the opening of the *chuck*), and conveys it to a similar *chuck* of another lathe, which receives it, and finishes the pointing on a finer steel mill.

4. This mill again stops, and another forceps removes the pointed pin into a pair of strong steel clams, having a small groove in them, by which they hold the pin very firmly. A part of this groove, which terminates at that edge of the steel clams which is intended to form the head of the pin, is made conical. A small round steel punch is now driven forcibly against the end of the wire thus clamped, and the head of a pin is partially formed by compressing the wire into the conical cavity.

5. Another pair of forceps now removes the pin to another pair of clams, and the head of the pin is completed by a blow from a second punch, the end of which is slightly concave. Each pair of forceps returns as soon as it has delivered its burden; and thus there are always five pieces of wire at the same moment in different stages of advance towards a finished pin. The pins so formed are received in a tray, and whitened and papered in the usual manner. About sixty pins can thus be made by this machine in one minute; but each process occupies exactly the same time in performing.

182. In order to judge of the value of such a machine, compared with hand labor, it would be necessary to inquire: 1. To what defects pins so made are liable? 2. What advantages they possess over those made in the usual way? 3. What is the prime cost of a machine for making them? 4. What is the expense of keeping it in repair? 5. What is the expense of moving it and attending to it?

1. Pins made by the machine are more likely to bend, because as the head is punched up out of the solid wire, it ought to be in a soft state to admit of this process. 2. Pins made by the machine are better than common ones, because they are not subject to losing their heads. 3. With respect to the prime cost of a machine, it would be very much reduced if numbers should be required. 4. With regard to its wear and tear, experience only can decide the question: but it may be remarked, that the steel clams or dies in which the heads are punched up will wear quickly, unless the wire has been softened by annealing; and that if it has been softened, the bodies of the pins will bend too readily. Such an inconvenience might be remedied, either by making the machine spin the heads and fix them on, or by annealing only that end of the wire which is to become the head of the pin; but this would cause a delay between the operations, since the brass is too brittle while heated to bear a blow without

crumbling. 5. On comparing the time occupied by the machine with that stated in the analysis, we find, except in the process of heading, if time alone is considered, that the human hand is more rapid. Three thousand six hundred pins are pointed by the machine in an hour; whilst a man can point fifteen thousand six hundred in the same time. But in the process of heading, the rapidity of the machine is two and a half times that of the human hand. It must, however, be observed, that the process of grinding does not require the application of force to the machine equal to that of one man; for all the processes we have described are executed at once by the machine, and one laborer can easily work it.

ON THE DIVISION OF MENTAL LABOR.

183. We have already mentioned what may, perhaps, appear paradoxical to some of our readers,—that the division of labor can be applied with equal success to mental operations, and that it insures, by its adoption, the same economy of time. A short account of its practical application, in the most extensive series of calculations ever executed, will offer an interesting illustration of this fact, whilst at the same time it will afford an occasion for showing that the arrangements which ought to regulate the interior economy of a manufactory are founded on principles of deeper root than may have been supposed; and are capable of being usefully employed in paving the road to some of the sublimest investigations of the human mind.

184. In the midst of that excitement which accompanied the Revolution of France and the succeeding wars, the ambition of the nation, unexhausted by its fatal passion for military renown, was at the same time directed to the nobler and more permanent triumphs which mark the era of a people's greatness,—and which receive the applause of posterity long after their conquests have been wrested from them, or even when their existence as a nation may be told only by the page of history. Amongst their enterprises of science, the French government was desirous of producing a series of mathematical tables, which should facilitate the extension of the decimal system they had so recently adopted. They directed, therefore, their mathematicians to construct such tables, on the most extensive scale. Their most distinguished philosophers, responding fully to the call of their country, invented new methods for this laborious task; and a work, completely answering the large demands of the government, was produced in a remarkably short period of time. M. Prony, to whom the superintendence of this great undertaking was confided, in speaking of its commencement, observes: "Je m'y livrai avec toute l'ardeur dont j'étois capable, et je m'occupai d'abord du plan général de l'exécution. Toutes les conditions que j'avois à remplir nécessitoient l'emploi d'un grand nombre de calculateurs; et il me vint bientôt à la pensée d'appliquer à la confection de ces tables la *division du travail*, dont les Arts de Commerce tirent un parti si avantageux pour réunir à la perfection de main-d'œuvre l'économie de la dépense et du temps." The circumstance which gave rise to this singular application of the principle of the *division of labor* is so interesting, that no apology is necessary for introducing it from a small pamphlet printed at Paris a few years since, when a proposition was made by the English to the French government, that the two countries should print these tables at their joint expense.

185. The origin of the idea is related in the following extract:

C'est à un chapitre d'un ouvrage Anglais, justement célèbre, (1.) qu'est probablement due l'existence de l'ouvrage dont le gouvernement Britannique veut faire jouir le monde savant: [*An Inquiry into the Nature and Causes of the Wealth of Nations*, by Adam Smith.]

Voici l'anecdote: M. de Prony s'était engagé, avec les comités de gouvernement, à composer pour la division centésimale du cercle, des ta-

bles logarithmiques et trigonométriques, qui, non seulement ne laissent rien à désirer quant à l'exactitude, mais qui forment le monument de calcul le plus vaste et le plus imposant qui eût jamais été exécuté, ou même conçu. Les logarithmes des nombres de 1 à 200,000 formaient à ce travail un supplément nécessaire et exige. Il fut aisé à M. de Prony de s'assurer que, même en s'associant trois ou quatre habiles co-opérateurs, la plus grande durée présumable de sa vie, ne lui suffirait pas pour remplir ses engagements. Il était occupé de cette fâcheuse pensée lorsque, se trouvant devant la boutique d'un marchand de livres, il aperçut la belle édition Anglaise de Smith, donnée à Londres en 1776; il ouvrit le livre au hasard, et tomba sur le premier chapitre, qui traite de la *division du travail*, et où la fabrication des épingles est citée pour exemple. A peine avait-il parcouru les premières pages, que, par une espèce d'inspiration, il conçut l'expédient de mettre ses logarithmes en *manufacture* comme les épingles. Il faisait, en ce moment, à l'école polytechnique, des leçons sur une partie d'analyse liée à ce genre de travail, la *méthode des différences*, et ses applications à l'*interpolation*. Il alla passer quelques jours à la campagne, et revint à Paris avec le plan de fabrication, qui a été suivi dans l'exécution. Il rassembla deux ateliers, qui faisaient séparément les mêmes calculs, et se servaient de vérification réciproque.*

186. The ancient methods of computing tables were quite inapplicable to such a proceeding. M. Prony, therefore, wished to avail himself of all the talent of his country, and formed the first section of those who were to take part in this enterprise, out of five or six of the most eminent mathematicians in France.

First Section.—The duty of this first section was to investigate, amongst the various analytical expressions which could be found for the same function, that which was most readily adapted to simple numerical calculation by many individuals employed at the same time. This section had little or nothing to do with the actual numerical work. When its labors were concluded, the formulæ, on the use of which it had decided, were delivered to the second section.

Second Section.—This section consisted of seven or eight persons of considerable acquaintance with mathematics: and their duty was to convert into numbers the formulæ put into their hands by the first section—an operation of great labor—and then to deliver out these formulæ to the members of the third section, and receive from them the finished calculations. The members of this second section had certain means of verifying these calculations without the necessity of repeating, or even of examining, the whole of the work done by the third section.

Third Section.—The members of this section, whose number varied from sixty to eighty, received certain numbers from the second section, and, using nothing more than simple addition and subtraction, they returned to that section the finished tables. It is remarkable that nine-tenths of this class had no knowledge of arithmetic beyond its two first rules which they were thus called upon to exercise, and that these persons were usually found more correct in their calculations than those who possessed a more extensive knowledge of the subject.

187. When it is stated that the tables thus computed occupy seventeen large folio volumes, some idea may perhaps be formed of the labor. From that part executed by the third class, which may almost be termed mechanical, requiring the least knowledge and by far the greatest labor, the first class were entirely exempt. Such labor can always be purchased at an easy rate. The duties of the second class, although requiring considerable skill in arithmetical operations, were yet in some measure relieved by the higher interest naturally felt in those more difficult operations. The exertions of the first

* Note sur la publication proposée par le gouvernement Anglais, des grandes tables logarithmiques et trigonométriques de M. de Prony: De l'imprimerie de F. Didot, Dec. 1, 1820, p. 7.

class are not likely to require, upon another occasion, so much skill and labor as they did upon the first attempt to introduce such a method; but when the completion of a calculating engine shall have produced a substitute for the whole of the third section of computers, the attention of analysts will naturally be directed to simplifying its application, by a new discussion of the methods of converting analytical formulæ into numbers.

188. The proceeding of M. Prony, in this celebrated system of calculation, much resembles that of a skilful person about to construct a cotton or silk mill, or any similar establishment. Having, by his own genius, or through the aid of his friends, found that some improved machinery may be successfully applied to his pursuit, he makes drawings of his plans of the machinery, and may himself be considered as constituting the first section. He next requires the assistance of operative engineers, capable of executing the machinery he has designed, some of whom should understand the nature of the processes to be carried on; and these constitute his second section. When a sufficient number of machines have been made, a multitude of other persons, possessed of a lower degree of skill, must be employed in using them; these form the third section: but their work and the just performance of the machines must be still superintended by the second class.

189. As the possibility of performing arithmetical calculations by machinery may appear to non-mathematical readers to be rather too large a postulate, and as it is connected with the subject of the *division of labor*, I shall here endeavor, in a few lines, to give some slight perception of the manner in which this can be done—and thus to remove a small portion of the veil which covers that apparent mystery.

190. That nearly all tables of numbers which follow any law, however complicated, may be formed, to a greater or less extent, solely by the proper arrangement of the successive addition and subtraction of numbers befitting each table, is a general principle which can be demonstrated to those only who are well acquainted with mathematics; but the mind, even of the reader who is but very slightly acquainted with that science, will readily conceive that it is not impossible, by attending to the following example. Let us consider the subjoined table. This table is the beginning of one in very extensive use, which has been printed and reprinted very frequently in many countries, and is called a *table of square numbers*.

| Terms of the table. | A. Table. | B. 1st Difference. | C. 2d Difference. |
|---------------------|-----------|--------------------|-------------------|
| 1 | 1 | | |
| 2 | 4 | 3 | |
| 3 | 9 | 5 | 2 |
| 4 | 16 | 7 | 2 |
| 5 | 25 | 9 | 2 |
| 6 | 36 | 11 | 2 |
| 7 | 49 | 13 | |

Any number in the table, column A, may be obtained, by multiplying the number which expresses the distance of that term from the commencement of the table by itself; thus, 25 is the fifth term from the beginning of the table, and 5 multiplied by itself, or by 5, is equal to 25. Let us now subtract each term of this table from the next succeeding term, and place the results in another column, (B,) which may be called first difference column. If we again subtract each term of this first difference from the succeeding term, we find the result is always the number 2, (column C:); and that the same number will always recur in that column, which may be called the second difference, will appear to any person who will take the trouble to carry on the table a few terms farther. Now

when once this is admitted as a known fact, it is quite clear that, provided the first term (1) of the table, the first term (3) of the first differences, and the first term (2) of the second or constant difference, are originally given, we can continue the table of square numbers to any extent, merely by simple addition: for the series of the first differences may be formed by repeatedly adding the constant difference 2 to (3) the first number in column B, and we then necessarily have the series of odd numbers, 3, 5, 7, &c.: and, again, by successively adding each of these to the first number (1) of the table, we produce the square numbers.

191. Having thus, I hope, thrown some light upon the theoretical part of the question, I shall endeavor to show that the mechanical execution of such an engine, as would produce this series of numbers, is not so far removed from that of ordinary machinery as might be conceived. Let the reader imagine three clocks placed on a table side by side, each having only one hand, and each having a thousand divisions instead of twelve hours marked on the face; and every time a string is pulled, let them strike on a bell the numbers of the divisions to which their hands point. Let him farther suppose that two of the clocks, for the sake of distinction called B and C, have some mechanism by which the clock C advances the hand of the clock B one division, for each stroke it makes upon its own bell; and let the clock B, by a similar contrivance, advance the hand of the clock A one division, for each stroke it makes on its own bell. With such an arrangement, having set the hand of the clock A to the division I., that of B to III., and that of C to II., let the reader imagine the repeating parts of the clocks to be set in motion continually, in the following order, viz.: pull the string of clock A; pull the string of clock B; pull the string of clock C.

| Repetitions of process. | Movements. | Clock A. Hand set to I. | Clock B. Hand set to III. | Clock C. Hand set to II. |
|-------------------------|------------|---|---|-----------------------------|
| 1 | Pull A. | A. strikes... 1 | 1st difference | 2d difference |
| | B. | The hand is advanced (by B.) 3 divisions... | B. strikes... 3 | |
| | C. | | The hand is advanced (by C.) 2 divisions... | C. strikes 2 |
| 2 | Pull A. | A. strikes... 4 | | |
| | B. | The hand is advanced (by B.) 5 divisions... | B. strikes... 5 | |
| | C. | | The hand is advanced (by C.) 2 divisions... | C. strikes 2 |
| 3 | Pull A. | A. strikes... 9 | | |
| | B. | The hand is advanced (by B.) 7 divisions... | B. strikes... 7 | |
| | C. | | The hand is advanced (by C.) 2 divisions... | C. strikes 2 |
| 4 | Pull A. | A. strikes... 16 | | |
| | B. | The hand is advanced (by B.) 9 divisions... | B. strikes... 9 | |
| | C. | | The hand is advanced (by C.) 2 divisions... | C. strikes 2 |

If now only those divisions struck or pointed at by the clock C be attended to and written down, it will be found that they produce the series of the squares of the natural numbers. Such a series could, of course, be carried by this mechanism only so far as the three first figures; but this may be sufficient to give some idea of the construction, and was, in fact, the point to which the first model of the calculating-engine, now in progress, extended.

192. We have seen, then, that the effect of the *division of labor*, both in the mechanical and mental processes, is, that it enables us to purchase and apply to each process precisely that quantity of skill and knowledge which is required for it: we avoid employing any part

of the time of a man who can get eight or ten shillings a day by his skill in tempering needles, in turning a wheel, which can be done for six pence a day; and we equally avoid the loss arising from the employment of an accomplished mathematician in performing the lowest processes of arithmetic.

193. The *division of labor* cannot be successfully practised, unless there exists a great demand for its produce; and it requires larger capital to be employed in those arts in which it is used. In watch-making it has been carried, perhaps, to the greatest extent. In an examination before a Committee of the House of Commons, it was stated that there are a hundred and two distinct branches of this art, to each of which a boy may be put apprentice; and that he only learns his master's department, and is unable, after his apprenticeship has expired, without subsequent instruction, to work at any other branch. The watch-finisher, whose business it is to put together the scattered parts, is the only one, out of the hundred and two persons, who can work in any other department than his own.

ON THE SEPARATE COST OF EACH PROCESS IN A MANUFACTURE.

194. The great competition introduced by machinery, and the application of the principle of the subdivision of labor, render it continually necessary for each producer to be on the watch, to discover improved methods by which the cost of the article he manufactures may be reduced; and, with this view, it is of great importance to know the precise expense of every process, as well as of the wear and tear of machinery which is due to it. The same information is desirable for others, through whose hands the manufactured goods are distributed; because it enables them to give reasonable answers or explanations to the objections of inquirers, and also affords them a better chance of suggesting to the manufacturer changes in the fashion of his goods, which may be more suitable either to the tastes or to the finances of his customers. To the statesman such knowledge is still more important, as without it he must trust entirely to others, and can form no judgment, worthy of confidence, of the effect any tax may produce, or of the injury the manufacturer or the country may suffer by its imposition.

195. One of the first advantages which suggests itself as likely to arise from a correct analysis of the expense of the several processes of any manufacture, is the indication which it furnishes of the course in which improvement should be directed. If any method should be contrived of diminishing by one-fourth the time required for fixing on the heads of the pins, the expense of making them would be reduced about thirteen per cent., whilst a reduction of one half the time employed in spinning the coil of wire out of which the heads are cut, would scarcely make any sensible difference in the cost of the manufacture of the whole article. It is, therefore, obvious, that the attention would be much more advantageously directed to shortening the former than the latter process.

196. The expense of manufacturing, in a country where the machinery is of the rudest kind, and manual labor is very cheap, is curiously exhibited in the price of cotton cloth in the island of Java. The cotton, in the seed, is sold by the picul, which is a weight of about 133 lbs. Not above one-fourth or one-fifth of this weight, however, is cotton; and the natives, by means of rude wooden rollers, separate, at the expense of one day's labor, about 1½ lb. of cotton from the seed. In this stage it is worth between four and five times its original cost: and the prices of the same substance, in its different stages of manufacture, are, for one picul: Cotton in the seed, 2 to 3 dollars—Clean cotton, 10 to 11—Cotton thread, 24—Cotton thread, dyed blue, 35—Good ordinary cotton cloth, 50.

Thus it appears that the expense of spinning in Java is 117 per cent. on the value of the raw material; that the expense of dying thread blue is 45 per cent. on its value; and that the

expense of weaving cotton thread into cloth is 117 per cent. on its value. The expense of spinning cotton into a fine thread is, in England, about 33 per cent.*

197. As an example of the cost of the different processes of a manufacture, perhaps an analytical statement of the expense of the volume now in the reader's hands may not be uninteresting, more especially as it will afford an insight into the nature and extent of the taxes upon literature. It is found economical to print it upon paper of an unusually large size, so that although thirty-two pages are really contained in each sheet, this work is still called 8vo. To printer for composing (per sheet of 32 pages) 3*l.* 1*s.*, 10½ sheets, £32 0 6
To printer for composing small type, as in extracts and contents, extra per sheet, 3*s.* 10*d.* - - - 2 0 3
To printer for composing table-work, extra per sheet, 5*s.* 6*d.* - - - 2 17 9
Average charge for corrections per sheet, 3*l.* 2*s.* 10*d.* - - - 33 0 0
Press-work, 3,000 being printed off, per sheet, 3*l.* 10*s.* - - - 36 15 0
Paper for 3,000, at 1*l.* 11*s.* 6*d.* per ream, weighing 28 lbs.: the duty on paper at 3*d.* per lb. amounts to 7*s.* per ream, so that the 63 reams which are required for the work will cost: Paper, 77*l.* 3*s.* 6*d.*—Excise Duty, 22*l.* 1*s.*, - - - 99 4 6

Total expense of printing and paper, 205 18 0
Steel plate for title page, £0 7 6
Engraving on steel, letters 1 1 0
Ditto Head of Bacon, - 2 2 0

Total expense of title page, 3 10 6
Printing title page, at 6*s.* per 100, 9 0 0
Paper for ditto, at 1*s.* 9*d.* per 100, 2 12 6
Expenses of advertising, - 40 0 0
Sundries, - - - 5 0 0

Total expense in sheets, - - 266 1 0

Cost of a single copy in sheets, - 0 1 9½
Extra boarding, - - - 0 0 6

Cost of each copy, boarded, - 0 2 3½

198. This analysis requires some explanation. The printer usually charges for composition by the sheet, supposing the type to be all of one kind; and as this charge is regulated by the size of the letter, on which the quantity of it in a sheet depends, little dispute can arise after the price is agreed upon. If there are a few extracts, or other parts of the work, which require to be printed in smaller type, or if there are many notes, or several passages in Greek, or in other languages, requiring a different type, these are considered in the original contract, and a small additional price per sheet allowed. If there is a larger portion of small type, it is better to have a specific additional charge for it per sheet. If any work, with irregular lines, and many figures, and what the printers call rules, occurs, it is called table-work, and is charged at an advanced price per sheet. Examples of this are frequent in the present volume. If the page consists entirely of figures, as in mathematical tables, which require very careful correction, the charge for composition is usually doubled. A few years ago I printed a table of logarithms, on a large sized page, which required great additional labor and care from the readers, in rendering the proofs correct, for which several new types were cast, although new punches were not required, and for which stereotype plates were cast, costing about 2*l.* per sheet. In this case 11*l.* per sheet were charged, although ordinary composition, with the same sized letter, in demy octavo, could have been executed at thirty-eight shillings per sheet: but as the expense was ascertained before commencing the work, it gave rise to no difficulties.

199. The charge for corrections and alterations is one which, from the difficulty of mea-

suring it, gives rise to the greatest inconvenience, and is as disagreeable to the publisher, (if he be the agent between the author and the printer,) and the master printer or his foreman, as it is to the author himself. If the author study economy, he should make the whole of his corrections in the manuscript, and should copy it out fairly: it will then be printed correctly, and he will have little to pay for corrections. But it is scarcely possible to judge of the effect of any passage correctly, without having it set up in type; and there are few subjects to which an author does not find he can add some details or explanations, when he sees his views in print. If, therefore, he wish to save his own labor in transcribing, and to give the last polish to the language, he may accomplish these objects at an increased expense. If the printer possess a sufficient stock of type, it will contribute still more to the convenience of the author to have his whole work put up in what are technically called *slips*,* and then to make all the corrections, and to have as few revisions as he can. The present work was set up in slips, but the corrections were unusually large, and the revisions frequent.

200. The press-work, or *printing off*, is charged at a price agreed upon for each two hundred and fifty sheets; any broken number is still considered as two hundred and fifty. When a large edition is required, the price for two hundred and fifty is reduced; thus, in the present volume, two hundred and fifty copies, if printed alone, would have been charged eleven shillings per sheet. The principle of this mode of charging is good, as it obviates all disputes; but it is to be regretted that the custom of charging for any small number the same price as for two hundred and fifty is so pertinaciously adhered to, that the master printers cannot get their men to agree to any other terms when only twenty or thirty copies are required, or even when only three or four are wanted for the sake of some experiment. Perhaps if all numbers above fifty were charged as two hundred and fifty, and all below as for half two hundred and fifty, both parties would derive an advantage.

201. The effect of the excise duty is to render the paper thin, in order that it may weigh little; but this is counteracted by the desire of the author to make his book look as thick as possible, in order that he may charge the public as much as he decently can; and so on that ground alone it is of no importance. There is, however, another effect of this duty, which both the public and the author feel; for they pay, not merely the duty which is charged, but also the profit on that duty, which the paper-maker requires for the use of additional capital; and also the profit to the publisher and bookseller on the increased price of the volume.

202. The estimated charge for advertisements is, in the present case, about the usual allowance for such a volume; and, as it is considered that advertisements in newspapers are the most effectual, where the smallest pays a duty of 3*s.* 6*d.*, nearly one half the charge of advertising is a tax.

203. It appears, then, that upon an expenditure of 276*l.* on the present volume, 42*l.* are paid in the shape of a direct tax.—Whether the profits arising from such a mode of manufacturing will justify such a rate of taxation, can only be estimated when the returns from the volume are considered, a subject that will be discussed in our subsequent pages. It is at present sufficient to observe, that the tax on advertisements is an impolitic tax, when contrasted with that upon paper, and on other materials employed. The object of all advertisements is, by making known articles for sale, to procure for them a better price, if the sale is to be by auction; or a larger extent of sale, if by retail dealers. Now the more any article is known, the more quickly it is discovered whether it contributes to the comfort or advantage of the public, and the more quickly its consumption

is assured if it is found valuable. [It would appear, then, that every tax on communicating information respecting articles which are the subject of taxation in another shape, is one which must considerably reduce the amount that would have been raised had no impediment been placed in the way of making known to the public their qualities and their price.]

ON THE CAUSES AND CONSEQUENCES OF LARGE FACTORIES.

204. On examining the analysis which has been previously given of the operations in the art of pin-making, it will be observed, that ten individuals are employed in it, and also that the time occupied in executing the several processes is very different. In order, however, to render more simple the reasoning which follows, it will be convenient to suppose that each of the six processes there described requires an equal quantity of time. This being supposed, it is at once apparent, that, to conduct an establishment for pin-making most profitably, the number of persons employed must be a multiple of ten. For if a person with small means has only sufficient capital to enable him to employ half that number of persons, they cannot each of them constantly adhere to the execution of the process; and if a manufacturer employs any number not a multiple of ten, a similar result must ensue with respect to some portion of them. The same reasoning extends to all manufactories which are conducted upon the principle of the *division of labor*, and we arrive at this general conclusion—

When (from the peculiar nature of the produce of each manufactory) the number of processes into which it is most advantageous to divide it is ascertained, as well as the number of individuals to be employed, then all other manufactories which do not employ a direct multiple of this number, will produce the article at a greater cost. This principle ought always to be kept in view in great establishments, although it is quite impossible, even with the best system of the *division of labor*, to carry it rigidly into execution. The proportion of the persons employed who possess the greatest skill is, of course, to be first attended to. That exact ratio which is most profitable for a factory employing a hundred workmen, may not be quite the most fit for one in which there are five hundred; and probably both admit of variations in their arrangements without materially increasing the cost of their produce. But it is quite certain that no individual, nor in the case of pin-making could any five individuals, ever hope to compete with an extensive establishment. Hence arises one of the causes of the great size of manufacturing establishments, which have increased with the progress of civilization. Other circumstances, however, contribute to the same end, and arise also from the same cause—the *division of labor*.

205. The material out of which the manufactured article is produced, must, in the several stages of its progress, be conveyed from one operator to the next in succession; this can be done at least, expense when they are all working in the same establishment. If the material is heavy, this reason acts with additional force; but in cases where it is light, the danger arising from frequently removing it may render it desirable to have all the processes carried on in the same building. In the cutting and polishing of glass this is the case; whilst in the art of needle-making, several of the processes are carried on in the cottages of the workmen. It is, however, clear that the latter plan, which is attended with some advantages to the family of the workmen, can be adopted only where there exists a sure and quick method of knowing that the work has been well done, and that the whole of the materials given out have been really employed.

206. The inducement to contrive machines for any process of manufacture increases with the demand for the article; and the introduction of machinery, on the other hand, tends to increase the quantity produced; and to lead to the establishment of large factories. An illus-

* These facts are taken from Crawford's Indian Archipelago. † This refers to the London edition, as published by Chas. Knight.

* Slips are long pieces of paper, on which sufficient matter is printed to form, when divided, from two to four pages of text.

tration of these principles may be found in the history of the manufacture of patent net.

The first machines for weaving this article were very expensive, costing from a thousand to twelve or thirteen hundred pounds. The possessor of one of these, though it greatly increased the quantity he could produce, was nevertheless unable, when working eight hours a day, to compete with the old methods. This arose from the large capital invested in the machinery; but he quickly perceived that, with the same expense of fixed capital and a small addition to his circulating capital, he could work the machine during the whole twenty-four hours. The profits thus realized soon induced other persons to direct their attention to the improvement of those machines; and the price was considerably reduced, at the same time that the rapidity of production of the patent net was increased. If machines be kept working through the twenty-four hours, it will be necessary that some person shall attend to admit the workmen at the time they relieve each other; and whether the porter or other servant so employed admit one person or twenty, his rest will be equally disturbed. It will also be necessary, occasionally, to adjust or repair the machine; and this will be done much better by a workman accustomed to machine making, than by the person who uses it. Now, since the good performance and the duration of machines depend to a very great extent upon correcting, as soon as it appears, every shake or imperfection in their parts, it will soon become apparent that a workman resident on the spot will reduce the expenditure arising from the wear and tear of machinery. But in the case of a single lace-frame, or a single loom, this would be too expensive a plan. Here, then, arises another circumstance which tends to enlarge the extent of a factory. It ought to consist of such a number of machines as shall occupy the whole time of one workman in keeping them in order, and in making any casual repairs: if it is extended beyond this, the same principle of economy would point out the necessity of doubling or tripling the number of machines, in order to employ the whole time of two or three skilful workmen.

207. Where one part of each workman's labor consists in the exertion of mere physical force, as in weaving and many similar arts, it will soon occur to the manufacturer, that if the loom or lace-frame were driven by a steam-engine, the same man might attend to two or more looms at once; and since we already suppose that he already employed one or more operative engineers, he may so arrange the number of his looms that the charge of keeping them and the steam-engine in order shall just fully occupy their time. One of the first effects will be, that the steam-engine can drive the looms twice as fast as human force; and as each man, when relieved from bodily labor, can attend to two looms, it will be found that one workman can now make as much cloth as four could do before. This increase was, however, greater than that which really took place at first; for the limit of the velocity of the parts of the loom depended upon the strength of the thread, and the quickness with which it commenced its motion: but an improvement was soon made, by which the motion commenced slowly, and gradually acquired greater velocity than it was safe to give it at once. This improvement increased the speed from 100 to about 120 strokes per minute.

208. Pursuing the same principles, the manufactory becomes gradually so enlarged, that the expense of lighting during the night amounts to a considerable sum; and as there are already attached to the establishment persons who are up all night, and can, therefore, constantly attend to it, and also engineers to make and keep in repair any machinery, the addition of an apparatus for making gas to light the factory introduces a new extension, at the same time that it contributes, by diminishing the expense of lighting, and the risk of accidents by fire, to reduce the cost of manufacturing.

209. Long before a factory has reached this extent, it will have been found necessary to establish an accountant's department, with clerks to pay the workmen, and to see that they arrive at their stated times; and this department must be in communication with the agents who purchase the raw produce, and with those who sell the manufactured article.

210. It would be of great importance, if, in every large establishment, the modes of paying the different persons employed could be so arranged, that each should derive advantage from the success of the whole, and that the profits of the individuals should advance as the factory itself produced profit, without the necessity of making any change in the wages agreed upon. This is by no means easy to effect, particularly amongst that class whose daily labor procures for them their daily meal. The system which has long been pursued in working the Cornish mines, although not exactly fulfilling these conditions, yet possesses advantages which make it worthy of attention, as having considerably approached towards them, and as tending to render fully effective the faculties of all engaged in it.

211. In the mines of Cornwall, almost the whole of the operations both above and below ground are contracted for. The manner of making the contract is nearly as follows. At the end of every two months, the work which it is proposed to carry on during the next period is marked out. It is of three kinds. 1. *Tut-work*, which consists in sinking shafts, driving levels, and making excavations; this is paid for by the fathom in depth, or in length, or by the cubic fathom. 2. *Tribute*, which is payment for raising and dressing the ore, by means of a certain part of its value when merchantable. It is this species of payment which produces such admirable effects. The miners, who are to be paid in proportion to the richness of the vein, and the quantity of metal actually extracted from it, naturally become quick-sighted in the discovery of ore, and in estimating its value; and it is their interest to avail themselves of every improvement that can bring it more cheaply to market. 3. *Dressing*: The tributors, who dig and dress the ore, can seldom afford to dress the coarsest parts of that which they raise at their contract price; they, therefore, leave it, and this portion is again let out to persons who agree to dress it at an advanced price. The lots of ore to be dressed, and the works to be carried on, having been marked out for some days, and having been examined by the men, a kind of auction is kept by the captains of the mine, in which each lot is put up, and bid for by different gangs of men. The work is then offered, at a price usually below that bid at the auction, to the lowest bidder, who rarely declines it at the rate proposed. The tribute is a certain sum out of every twenty shillings' worth of ore raised, and may vary from three pence in the pound to fourteen or fifteen shillings. The rate of earnings in tribute is very uncertain: if a vein, which was poor when taken, becomes rich, the men earn money rapidly; and instances have occurred in which each miner of a gang has earned a hundred pounds in two months. These extraordinary cases are, perhaps, of more advantage to the owners of the mine than even to the men; for whilst the skill and industry of the workmen are greatly stimulated, the owner himself always derives greater advantage from the improvement of the vein.* This system has been introduced, by Mr. Taylor, into the lead mines of Flintshire, into those at Skipton, in Yorkshire, and into some of the copper mines of Cumberland; and it is desirable that it should become general, because no other mode of payment affords to the workmen a measure of success so directly proportioned to the industry, the integrity, and the talent, which they exert.

212. We have seen that the application of the division of labor tends to produce cheaper articles: it thus increases the demand, and gra-

* For a detailed account of the method of working the Cornish mines, see a paper of Mr. John Taylor's, Transactions of the Geological Society, vol. ii. p. 309.

dually, by the effect of competition, or the hope of increased gain, causes large capitals to be embarked in extensive factories. Let us now examine the influence of such accumulation of capital directed to one object. In the first place it enables the most important principle on which the division of labor rests, to be carried almost to its extreme limits: not merely the precise amount of skill is purchased which is necessary for the execution of each process, but throughout every stage from that in which the raw material is procured, to that by which the finished produce is conveyed into the hands of the consumer, the same economy of skill prevails. The quantity of work produced by a given number of people is greatly augmented by such an extended arrangement; and the result is necessarily a great reduction in the cost of the article which is brought to market.

213. Amongst the causes which tend to the cheap production of any article, and which require additional capital, may be mentioned the care which is taken to allow no part of the raw produce, out of which it is formed, to be absolutely wasted. An attention to this circumstance sometimes causes the union of two trades in one factory, which otherwise would naturally have been separated. An enumeration of the arts to which the horns of cattle are applicable, furnishes a striking example of this kind of economy. The tanner, who has purchased the hides, separates the horns, and sells them to the makers of combs and lanterns. The horn consists of two parts, an outward horny case, and an inward conical-shaped substance, somewhat intermediate between indurated hair and bone. The first process consists in separating these two parts, by means of a blow against a block of wood. The horny exterior is then cut into three portions by means of a frame-saw.

1. The lowest of these, next the root of the horn, after undergoing several processes, by which it is rendered flat, is made into combs.

2. The middle of the horn, after being flattened by heat, and its transparency improved by oil, is split into thin layers, and forms a substitute for glass in lanterns of the commonest kind.

3. The tip of the horn is used by the makers of knife-handles and of the tops of whips, and for other similar purposes.

4. The interior, or core of the horn, is boiled down in water. A large quantity of fat rises to the surface; this is put aside, and sold to the makers of yellow soap.

5. The liquid itself is used as a kind of glue, and is purchased by the cloth-dressers for stiffening.

6. The bony substance, which remains behind, is then sent to the mill, and, being ground down, is sold to the farmers for manure.

Besides these various purposes to which the different parts of the horn are applied, the clippings, which arise in comb-making, are sold to the farmer for manure at about one shilling a bushel. In the first year after they are spread over the soil they have comparatively little effect, but during the next four or five their efficacy is considerable. The shavings which form the refuse of the lantern-maker are of a much thinner texture; a few of them are cut into various figures and painted, and used as toys, for, being hygrometric, they curl up when placed in the palm of a warm hand. But the greater part of these shavings are sold also for manure, which, from their extremely thin and divided form, produces its full effect upon the first crop.

A Petrification.—Baron Steuben died of apoplexy at Steuben, Oneida Co. N. Y. in November 1795.—Agreeably to his request his remains were wrapped in his cloak, enclosed in a plain coffin, and deposited in a grave without a stone. Many years after, as we learn by a memoir in the N. Y. Com. Advertiser, his body was disinterred for the purpose of burial in another place and it was found to have passed into a state of complete petrification, and is believed to remain in that state of preservation to this day. The features of his face were as unchanged as on the day of his interment.

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LITERARY NOTICES.

ON THE PENITENTIARY SYSTEM OF THE UNITED STATES, AND ITS APPLICATION IN FRANCE, WITH AN APPENDIX, &c. by G. DE BEAUMONT, and A. DE TOQUEVILLE; translated from the French, with an Introduction, Notes, &c. by FRANCIS LIEBER: 1 vol. 8vo. Philadelphia, CAREY, LEA & BLANCHARD.—Most of our readers will remember the journey which the authors of this book made a year or two ago, to this country, by order of their government, with a view of ascertaining, by actual inspection and inquiry on the spot, the principles and operation of our penitentiary system. The volume before us is an abstract of these inquiries, furnishing the conclusions at which the commissioners arrived, and some of the documents on which those conclusions rest. It is not the report made to their government, for that was in much greater detail—but the summing up as it were of the whole matter. As Americans, we have great reason to be satisfied with the tone of this work, and with the facts so creditable to the practical good sense and humanity of our people, which it sets forth. It is but just to say too, that the whole inquiry seems to have been conducted by those enlightened Frenchmen with an absence of prejudice or preconceived theories—alike rare on such occasions, and commendable. Their aim was the truth, and that they steadily pursued wherever it might lead. The penitentiary system is one of the contributions of America to the cause of humanity; and full credit is given us for it in these pages: and the principle upon which it rests, that of combining labor with individual isolation and solitude, is probably perfect, the only difference now being in the modes of applying this principle. In Pennsylvania, each prisoner is confined in a separate cell, which he never leaves, performing there the task assigned him, and ignorant of all around him, never seeing nor being seen by his fellow-convicts. In this State, according to what is known as the Auburn system, each prisoner is, in like manner, confined at night in a separate cell, but eats and works in public, that is, with all the other prisoners; but complete silence is inexorably enforced: a word, a sign, a look of intelligence exchanged between convicts, is punished on the spot with severe whipping. In this manner, a thousand convicts march to and from their cells, their refectory, and their workshops, as if they were so many shadows. The respective advantages of these systems are yet perhaps to be determined; though thus far the preference has been decidedly given to that of Auburn by all the States which have recently established penitentiaries. The French Commissioners also incline to that system. The intelligent translator, however, Dr. Lieber, prefers that of Pennsylvania, as upon the whole more soothing and sure. In an introductory article Dr. Lieber urges with zeal and unanswerable arguments, the great importance towards perfecting the Penitentiary system, of Houses of Detention. On this subject we shall again have occasion to refer to this work, which we must now dismiss with warm commendation of its usefulness and value—both of which are added to by the copious notes of the translator.

THE BOOK OF THE NURSERY, WITH PRECEPTS FOR THE MANAGEMENT OF INFANTS, &c. By WALTER C. DENDY, Member of the Royal College of London, &c. &c. New-York, WM. JACKSON.—This republication presents to mothers and nurses a judicious treatise, without any parade of professional learning, on the proper mode of bringing up infants, morally and physically;—we say morally, for it is hardly suspected by other than the most observing parents, how soon the infant is susceptible of moral impressions. It is a neat little volume, too, and well printed.

THE ABBESS, A ROMANCE, BY MRS. TROLLOPE. 2 vols. *Harper's*.—The last miserable production of Mrs. Trollope in the way of a novel, the *Refugee*, led us to open the one before us with no very great expectation of interest or amusement. The *Abbess*, however, is by no means deficient in merit. The conception of the story is rather original, and it is managed occasionally with a good deal of skill. A brief extract will give some idea of the style and incident which characterize the book. The following scene represents the well known ceremony attending the punishment of a nun for having broken her vows:—

As soon as the Abbots had reached their respective stalls, and the priests their stations at the altar, Camilla was led to the front of it, by the men who had been employed to prepare her for the ceremony of degradation.

A stool was placed at the distance of a few yards from the lowest step of the altar, and on this the unhappy Camilla was seated, in the full dress of her order, and with her veil thrown completely over her. The rule she was said to have transgressed was written on parchment, and held up before her by an aged sister of the convent.

The community lined the two sides of the nave, leaving a wide space between them, in the middle of which was a bier, with a black pall thrown across it.

As soon as Camilla was seated, the two lines chanted in low and dismal cadence, the alternate verses of the *Miserere*, pausing long between each verse. During these pauses, the stranger monks took off the veil, hood, and robe of Camilla, leaving her unclothed, save by a long tunic of white cloth, which reached from the throat to the feet. Her religious habit was torn asunder into many fragments, and scattered on the floor.

The sentence recorded against her was then read aloud in Latin, and three times repeated. She was now commanded to rise, and the procession began. It was preceded by a priest, who carried a large cross reversed. The sisterhood followed, two and two, each bearing in her hand an extinguished torch. Then came the pale Camilla, in her white shroud-like garment, supported on each side by a sable mute. Next followed two priests, one carrying incense, the other holy water; and last, the two mitred Abbots closed the line.

The march was slow and solemn. Each nun, her head sunk in her bosom, and her veil closely drawn round her, recited in a low whisper the prayers for the dying.

In this order they passed down the side aisle, and up to the centre of the nave where stood the bier. The nuns again divided into two lines, taking their station as before. Camilla, pale, motionless, and seemingly unconscious of what was passing, was raised without a struggle in the arms of the mutes, and placed upon the bier, where she lay perfectly still and unresisting while the assistant priests spread the funeral pall over her.

This ceremony completed, the solemn service for the dead was heard from the altar; and when this ended, the thrilling words, "*Requiem eternam dona ei, Domine!*" burst forth in full chorus from the nuns.

When the Requiem ceased, a silence like that of the grave ensued, and lasted till time sufficient had been allowed for each to breathe an inward prayer.

Then a signal was given to the nuns, who immediately retired with slow and noiseless steps, not one of them daring to throw a farewell glance to the poor wretch, who, warm in life and youth, was now to be interred within her horrid tomb. All the assistants followed, except the mutes, the stranger priests, whose uniplying services were still required, and the two judges, who were bound to see the final execution of their sentence.

As soon as the doors of the chapel were closed, Isidore gave a signal to the men. The bier was lifted on their shoulders, and borne through the iron door into the vaults.

It was, as Geraldine had supposed, within the massive depth of the wall which guarded the building from the sea, that the living tomb was fabricated, and the dark aperture now yawned before them; its horrors rendered visible by the pale light of a wax taper that burned within it, near which was placed a pitcher of water, and a small loaf of bread.

The bier was placed on the earth—the pall was removed: but the assistants started back as they withdrew it, exclaiming—

"She is already dead!"

"Then bury her," said Isidore, with horrid calmness.

Camilla was again raised in the arms of her executioners, who bore her forward to the dark recess: the cool air revived her strength, and the friendly faintness forsook her; she opened her eyes upon the scene, and all its terrors seized her heart at once. For a moment she looked wildly on them all, and then uttered a shriek, which left its sound within the ears that heard it as long as life remained. Yet it did but hasten the deed. Startled, but not softened, by that dismal cry, the men threw her from their arms, and instantly began the frightful work that was to shut out the air of life for ever.

The wretched woman sprang upon her feet—the stones were rolled against her—she raised her helpless arms, and madly strove to impede the savage work—in vain. A few short moments hid her from their sight, and a few more restored the treacherous wall to the same look of harmlessness as its neighbors.

THE MARTYRS' TRIUMPHS, THE BURIED VALLEY, AND OTHER POEMS, by GRENVILLE MELLEN. Boston: Lilly, Wait, Colman & Holden. 1 vol. 12mo. pp. 300.—We have looked over this elegantly printed volume with a great deal of pleasure. If elevated and chastened imagination, glowing language, and melodious versification constitute true poetry, the collection which Mr. Mellen puts forth with so modest a preface is well entitled to the name. We remember but few happier verses on the same subject in the range of English poetry, than the following from a fine lyric, in the book before us, entitled "The Host of Night":

Look at the host of night—
These silent stars!
What have they known of blight,
Or heard of wars!
Were they not marshalled there,
These fires sublime,
Gemming the midnight air
Ere earth knew time!
Shine they for aught but earth,
These silent stars!
And when they sprung to birth,
Who broke the bars,
And let their radiance out,
To kindle space?
When rang God's morning shout
O'er the glad race!
Are they imbedded there,
These silent stars!
Or do they circle air
On brilliant cars!
Range they in frightful mirth
Without a law—
Or stand they above earth,
In changeless awe!
Are they all desolate,
These silent stars—
Hung in their spheres by fate
Which nothing mars!
Or are they guards of God—
Shining in prayer!
On the same path they've trod
Since light was there!

The following extract from a piece entitled "A Dream of the Sea," displays poetical powers of no common order. The dreamer is supposed to be traversing the bed of ocean, where, while he scans the garnered treasures of that lifeless world, he can hear the everlasting waves above him "go bellowing to their bounds;" and thus he tells his fearful visions:—

Beneath the cloudy waters I could see
Palace and city crumbled—and the ships
Sunk in the engorging whirlpool, while the laugh
Of revel swept the ringing decks—and ere
The oath was strangled in men's swollen throats.
For there they lay—just hurried to one grave,
With horrible contortions and fixed eyes,
Waving among the cannon, as the surge
Did slowly lift them, and their streaming hair
Twining around the blades that were their pride.
And there were two, lock'd in each other's arms;
And they were loved!—laid cheek to cheek,
O God! how beautiful—laid cheek to cheek,
And heart to heart, upon that splendid deep,
A bridal bed of pearls!—a burial,
Worthy of two so young and innocent!
And they did seem to lie there, like two gems—
The fairest in the halls of ocean—both
Repos'd in love—a tearless death—one lock,
One wish—one smile—one mantle for their shroud—
One hope—one kiss—and that not yet quite cold!
How beautiful to die in such fidelity!
Ere yet the curse has ripen'd—or the heart
Begins to hope for death as for a joy,
And feels its streams grow thicker, till they cloy
With wishes that have sicken'd and grown old!
I saw their cheeks were pure and passionless,
And all their love had past into a smile,
And in that smile they died!—
Sudden a rattle roll'd above my head,
And there came down a flash into the deep,
Illuming its dim chambers—and it pass'd.

The waters shudder'd, and a thousand sounds
Sung hellish echoes through the cavern'd waste.
The blast was screaming on the upper wave;
And as I look'd above me, I could see
The ships go booming thro' the murky storm—
Sails rent—mast staggering—and a spectre crew;
Blood mingled with the foam, bathing their bows;
And I could hear their shrieks as they went on,
Crying of murder to their bloody foes!

These two contrasted pictures are certainly very fine, and we are only sorry that our limits prevent our extracting the whole piece, which is equally well sustained throughout. But to do a volume of original poems like that before us justice, we must return to it more than once. And trusting that the few specimens we have shown of Mr. Mellen's powers are still sufficient to stimulate the curiosity of our readers to examine this interesting collection for themselves, we take leave of it for the present, with many thanks to the author for the heartfelt pleasure its perusal has afforded.

THE NEW GIL BLAS, or Pedro of Penafior, by Henry D. Inglis, author of "Spain in 1830," 2 vols. Philad., Carey & Son.—This though a very readable book, has, like the previous work by the same author, been much overpraised. It is written in an easy and rather agreeable style, and the costume of the country where the scene is laid is, so far as we can judge, well preserved; but the incidents are in the highest degree improbable, and the principal characters too extravagant altogether. The work, as may be gathered from the first part of the title, is a collection of tales strung together like threaded beads upon one main story. In the invention of some of these tales no little ingenuity and cleverness is manifested, but to the most of them taken separately, the remarks we have made above are perfectly applicable, while when they come to be considered together, so defective are they in that natural adhesion and truth to nature which renders the model upon which the book is written one of the most delightful in the world, that comparisons almost fatal to the copy cannot fail to suggest themselves. We had marked one well written sketch to follow here, but are under the necessity of postponing it until another day.

WILD SPORTS OF THE WEST, BY THE AUTHOR OF STORIES OF WATERLOO. Harpers. 2 vols.—This is one of the most agreeable light reading books that has been for some time reprinted here. It abounds in vivid sketches of scenery and manners in the west of Ireland, and amid the most animated accounts of every variety of field sports, introduces a melange of ludicrous anecdotes and striking legendary tales. The material is good, and it is well put together.—The great charm of the work, after all, however, consists perhaps in the freshness of the subjects which the writer, (who we believe is a clergyman of the Church of England,) deals with. The west of Ireland has only lately become a field trodden by the novelist; and those remote districts, rich in beautiful scenery and abounding in legendary lore, are almost as virgin ground to the tourist and sportsman as when described by Spenser two hundred years ago. "And sure," says the poet, "it is yet a most beautiful and sweet country as any is under heaven, being stored throughout with many goodly rivers, replenished with all sorts of fish most abundantly, sprinkled with many very sweet islands and goodly lakes, like little inland seas, that will even carry shippes upon their waters." Such as it appeared to the author of the Faery Queen, before his castle was burnt over his head, and the body of his murdered infant consumed in the blazing ruins, is this beautiful but ill-fated country described in the book before us. Nature there, as elsewhere, has kept her never-failing promise, in the yearly renewal of all her charms; while man, bowed but not broken by centuries of misgovernment and oppression—smarting under a sense of entailed poverty, and stung to vindictiveness by accumulated injury—exhibits too often the same savage character, the same horrid acts, that drove one of England's sweetest poets,

himself the gentlest of beings, from his happy home, to mourn in exile over his murdered offspring, and hearth made desolate for ever. Not few are the scenes of violence and bloodshed described in the volumes before us; but among them it is gratifying to find instances like the following, which show the effect of cool and steady courage in repelling a band of midnight ruffians:

Several years ago, when the south of Ireland was, as it has ever has been within my memory, in a disturbed state, a gentleman advanced in years lived in a retired country house. He was a bachelor, and whether trusting to his supposed popularity, or imagining that the general alarm among the gentry was groundless, he continued in his lonely mansion long after their neighbors had quitted theirs for a safer residence in town. He had been indisposed for several days, and on the night he was attacked, had taken supper in his bedroom, which was on the ground floor, and inside a parlor, with which it communicated. The servants went to bed; the house was shut up for the night; and the supper-tray, with its appurtenances, by a providential oversight, were forgotten in the old man's chamber.

Some hours after he had retired to bed, he was alarmed at hearing a window lifted in the outer apartment; his chamber-door was ajar, and the moon shone brilliantly through the open casement, rendering objects in the parlor distinct and perceptible to any person in the inner room. Presently a man leaped through the window, and three others followed him in quick succession. The old gentleman sprang from his bed, but unfortunately there were no arms in the apartment; recollecting, however, the forgotten supper-tray, he provided himself with a case-knife, and resolutely took his stand behind the open door. He had one advantage over the murderers, they were in full moonlight, and he shrouded in impenetrable darkness.

A momentary hesitation took place among the party who seemed undecided as to which of them should first enter the dark room; for, acquainted with the localities of the house, they knew well that there the devoted victim slept. At last one of the villains cautiously approached, stood for a moment in the doorway, hesitated, advanced a step—not a whisper was heard, a breathless silence reigned around, and the apartment before him was dark as the grave itself.—"Go on, blast ye! What the devil are ye afeard of?" said the rough voice of an associate behind; he took a second step, and the old man's knife was buried in his heart! No second thrust was requisite, for with a deep groan the robber sunk upon the floor.

The obscurity of the chamber, the sudden destruction caused by that deadly thrust, prevented the ruffians in the outer room from knowing the fate of their companion. A second presented himself, crossed the threshold, stumbled against his dead associate, and received the old man's knife in his bosom. The wound, though mortal, was not so fatal as the other, and the ruffian had strength to ejaculate that he was "a dead man!"

Instantly, several shots were fired, but the old gentleman's position sheltered him from the bullets. A third assassin advanced, levelled a long fowling-piece through the door-way, and actually rested the barrel against the old man's body. The direction, however, was a slanting one, and with admirable self-possession, he remained steady until the murderer drew the trigger, and the ball passed him without injury; but the flash from the gun unfortunately disclosed the place of his ambush. Then commenced a desperate struggle, the robber, a powerful and athletic ruffian, closed and seized his victim around the body—there was no equality between the combatants with regard to strength; and although the old man struck often and furiously with his knife, the blows were ineffectual, and he was thrown heavily on the floor with the murderer above him. Even then, at that awful moment, his presence of mind saved this heroic gentleman. He found that the blade of the knife had turned, and he contrived to strengthen it upon the floor. The ruffian's hands were already upon his throat—the pressure became suffocating—a few moments more and the contest must have ended; but an accidental movement of his body exposed the murderer's side—the old man struck with his remaining strength a deadly blow—the robber's grasp relaxed—and with a yell of mortal agony, he fell dead across his exhausted opponent!

Horror-struck by the death-shriek of their comrades, the banditti wanted courage to enter that gloomy chamber which had been already fatal to so many.

They poured an irregular volley in, and leaping through the open window, ran off, leaving their lifeless companions behind.

Lights and assistance came presently, the chamber was a pool of gore, and the old man, nearly in a state of insensibility, was covered with the blood, and encompassed by the breathless bodies of his intended murderers. He recovered, however, to enjoy for years his well-won reputation, and to receive from the Irish viceroy the honor of knighthood, which never was conferred before upon a braver man.

The following is a pitiable contrast to the above gallant story:

"In 181—," said my kinsman, "a gentleman with his family left Dublin, and removed to an extensive farm he had taken in the wild and troublesome barony of ——. There was no dwelling-house procurable for some time, and the strangers took up their residence in a large cabin upon the road-side, about a mile distant from the little town of —ford.

It was naturally supposed that, coming to settle in a strange country, this gentleman had brought money and valuables along with him; a gang of robbers infested that lawless neighborhood under the command of the notorious Captain Gallagher, and they marked out the stranger for a prey.

This new settler had been married but a few months, and his wife was a young and lovely woman. On the third night after their arrival they retired at their customary hour to rest—he slept upon the ground-floor, and the lady and her female attendants occupied some upper chambers.

It was past midnight; the unsuspecting family buried in deep repose, when Mr. — was fearfully awakened by a stone shattering the window and breaking the looking-glass upon the table. He was, unhappily, a nervous, timid man; he was aware that the house was being attacked; a loaded carbine lay within his reach, but he appears to have abandoned all hope or thought of defending himself;—he heard the crashing of the cabin-windows—he heard the appalling sound of women's shrieks—but, trembling and agitated, he had not power to leave his bed.

Never did a more dastardly gang attack a house than Gallagher's. After every window was driven in, more than half an hour elapsed before one of them would attempt to enter, although no show of resistance had been offered by the inmates of the house. The cowardly villains would occasionally peep through the shattered casement, and instantly withdraw.

A single blow struck with good effect, one shot from the loaded carbine, would have scattered the scoundrels, and saved the family from plunder and a dreadful insult. But the unhappy man, paralyzed with terror, lay in helpless imbecility upon his bed, and the banditti, satisfied that no resistance would be offered, at last made good an entrance.

They lighted candles, bound the unfortunate gentleman, left him half dead with terror, and proceeded to ransack the premises. Soon after shrieks from the lady's chamber announced their being there. They drank wine, and broke every place and thing in the expectation of plunder.

But, unfortunately, they were disappointed; I say unfortunately, as, had they found money, it is possible the lady would have been preserved from insult. Maddened by liquor, and disappointed in their expected booty, the helpless women were subjected to savage insult.

What must have been that wretched man's sufferings, as he listened to the supplications of his beautiful wife for pity?

After a dreadful visit of three hours, the ruffians left the house. Their apprehension was almost immediate. I was present at the trial, and the testimony of that beautiful woman, who sat on the bench beside the judge, with the evidence of the wretched husband, was melancholy.

Conviction followed, and I attended at the place of execution."

The Western Lakes of Ireland:

Of the greater western lakes, Conn and Carra belong to Mayo; Corrib to Galway; and Mask lies between both counties. The most northerly, Lough Conn, is about nine miles long by two or three in breadth. Part of its shores are beautifully wooded; and where the lower and upper lakes unite, the channel is crossed by a bridge of one arch, called the Ponton; there the scenery is indeed magnificent.

Lough Carra is smaller than Conn; as a sheet of water nothing can be more beautiful—every thing that the painter delights to fancy may here be realized. Islands and peninsulas, with rich over-hanging

woods, a boundless range of mountain masses in the distance, ruins in excellent keeping—all form a splendid study for the artist's pencil.

Mask communicates with Carra, and their united waters discharge themselves into Lough Corrib by a very curious subterranean channel at Cong. Lough Corrib is largest of all; it stretches twenty miles to its southern extremity at Galway, when, through a bold rocky river, it discharges its waters into the Atlantic. Its breadth is very variable, ranging from two to twelve miles. Besides its singular connexions with the Mayo lakes by the underground channel at Cong, Lough Corrib produces a rare species of muscels, in which pearls are frequently discovered. Many of them are said to afford beautiful specimens of that valuable gem.

The smaller lakes, which are so profusely scattered over the surface of this county, vary in the species of fish which they respectively produce, as much as they do in their own natural size and character. Some of them afford trout, others pike only, and many are stocked with both. That this union cannot long subsist, I should be inclined to infer from one remarkable circumstance, and it is a convincing proof of the rapid destruction which the introduction of pike into a trout-lake will occasion. Within a short distance of Castlebar there is a small bog-lake, called Derreens; ten years ago it was celebrated for its numerous and well-sized trouts. Accidentally pike effected a passage into the lough from the Minola River, and now the trouts are extinct, or, at least, none of them are caught or seen. Previous to the intrusion of the pikes, half a dozen trouts would be killed in an evening in Derreens, whose collective weight often amounted to twenty pounds.

Indeed, few of the Mayo waters are secure from the encroachments of the pike. The lakes of Castlebar, I believe, still retain their ancient character; but I understand that pikes have been latterly taken in the Turlough River, and of course they will soon appear in a lake which directly communicates with this stream.

Irish Litigation:

It is asserted, with what truth I cannot pretend to state, that the inhabitants of Inniskea are prone to litigation, and a curious legend of a law-suit is told upon the main, illustrative of this their quarrelsome disposition. A century ago two persons were remarkable here for superior opulence, and had become the envy and wonder of their poorer neighbors. Their wealth consisted of a flock of sheep, when, unfortunately, some trifling dispute occurring between them, a dissolution of partnership was resolved upon. To divide the flock, one would suppose, was not difficult, and they proceeded to partition the property accordingly. They possessed one hundred and one sheep; fifty fell to each proprietor, but the odd one—how was it to be disposed of? Neither would part with his moiety to the other, and after a long and angry negotiation, the sheep was left in common property between them. Although the season had not come round when sheep are usually shorn, one of the proprietors, requiring wool for a pair of stockings, proposed that the fleece should be taken off. This was resisted by his co-partner, and the point was finally settled by shearing one side of the animal. Only a few days after, the sheep was found dead in a deep ditch—one party ascribed the accident to the cold feelings of the animal having urged him to seek a shelter in the fatal trench; while the other contended, that the wool remaining upon one side had caused the wether to lose its equilibrium, and that thus the melancholy catastrophe was occasioned. The parties went to law directly, and the expenses of the suit actually devalued the produce of the entire flock, and reduced both to a state of utter beggary. Their descendants are pointed out to this day as the poorest of the community, and litigants are frequently warned to avoid the fate of "Malley and Malone."

The above extracts, though characteristic of the work, and therefore selected here, give but little idea of the variety of lively anecdote and interesting local sketches to be found in "Wild Sports of the West." Many quotations have long since been made in our columns from the English edition; but to those who wish to study a state of society the most unique in the world, and who have not time to peruse the whole book, we recommend especially the chapter in vol. 2, entitled "Moral condition of the West, Past and Present."

Contents of the forthcoming No. of the American Quarterly Review.—Art. 1. The Life and Writings of Governor Livingston. 2. Windham's life and

Speeches. 3. Slavery in the District of Columbia. 4. Poor Laws. 5. Imprisonments of Silvio Pellico. 6. Goodrich's Geography. 7. Felton's Homer. 8. Works of Joanna Baillie. 9. Roscoe's Life and Writings. 10. The Penitentiary System of the U. States.

SUMMARY.

The amount of cash duties the week before last, received at the New York Custom House, on Woolens, was over \$180,000. There were received at our Post Office on Friday, after 3 o'clock, P. M., 5595 ship letters, all of which were mailed in less than 4 hours.

The Washington Globe of Saturday states that the President of the United States returned on the previous day from the Rip Rap—his health and strength much recruited.

INTERESTING AND PAINFUL NEWS.—The editors of the Gazette have before them a letter from a friend, dated

EASTPORT, AUG. 19.—It states, "I have seen Capt. Tucker, of schooner Leader, just returned from the Magdalen Islands, who informs that Mr. Audubon, a week previous to the 22d of June, had been at an adjoining harbor, where he remained two days.

Capt. Tucker also informs, that this has been a most disastrous season among the fishermen belonging to Newfoundland, about 300 of them having been lost, with their vessels, (about 35,) in fishing for seal among the floating ice in the spring. It is supposed they were all lost in a violent gale in the spring, which destroyed the vessels among the ice."

The Philadelphia United States Gazette of yesterday, gives a noble instance of courage and devotion in a female, under circumstances the most appalling.

Two men were suffocated in a kiln on Monday morning, about half way between Burlington and Moorestown. They were engaged in preparing a kiln for burning lime, in which stone coal and charcoal are used in alternate layers. In the course of the operation, and after the under layers had become ignited, one of the men descended for the purpose of leveling the coal, and was immediately overcome by the suffocating effects of the charcoal. His companion went down to his assistance, and was similarly affected, and both were so completely prostrated, as to be incapable of getting out. In this condition, they were discovered by the wife of one of the men. She immediately descended the kiln, and attempted to secure a rope about her husband, in hopes of being able to pull him out, but soon found herself gasping for breath. She succeeded in reaching the mouth of the kiln, and after recovering herself, descended a second time, but was again compelled to leave her husband, whom she beheld in the agonies of death beneath her. Unable to witness his expiring struggles without endeavoring to save him, the heroic woman made a third descent, and after every exertion, was forced to relinquish her desperate task, and the smothering effects of the charcoal were so distressing, that she was just able to reach the top of the kiln, when she fell from excessive exhaustion and faintness. The two men are dead.

Strange Animal.—An animal of strange cognomen has repeatedly been seen in and about the woods at Hadley, (Upper Mills,) exciting no little curiosity in that vicinity. He is represented as larger than a fox, of a brindled colour, long hind legs and short front ones, and belongs to no species known about here. He is rather ferocious, and when seen in the road by two men between the Upper Mills and Sunderland, he growled angrily, and seemed disposed to act on the offensive. No hunters have been able to get a shot at him, but dogs have been vanquished and they refuse to renew the attack again. He is thought to be a species of the Kangaroo, going upon his long hind legs, by skipping and jumping. A general hunt is to be attempted in a few days. If successful, we may learn something more minute about him.—[Northampton Courier.]

JACKSONVILLE, (Ill.) Aug. 10.—On Thursday last a company of Indians passed through Jacksonville. There were seventy, including men, women and children. They belonged to the Shawnee tribe—had sold out their lands in Ohio, and were on their way to Jackson county, Missouri. They looked cheerful and happy, and were all well mounted. The men had their rifles with them, and it was remarked by some, more timid than the rest, that perhaps the Indians had heard that the Cholera was among us, and

on account of the few inhabitants in our town, had come, expecting to make of us an easy prey!—[Ill. nois Patriot.]

A gentleman in South Russel Street, Boston, on examining his well of water on the 12th instant, discovered a box containing several pounds of butter, which had laid in the well eleven years; it was found to be in a good state of preservation.

102 black fish were driven ashore at Provincetown on Saturday morning by the crews of eight boats, and over 100 pounds of oil obtained from them.

[From the Albany Daily Advertiser of Aug. 21.]

THE SENECA INDIANS.—The annexed proceedings of a Council of this Nation, residing in the Western part of this State, have been furnished us for publication by the Interpreter:

The chiefs of the Seneca Nation of Indians, have, in Council, determined not to send a delegation to Green Bay, as was proposed to them; and have also determined to have nothing to do with the Green Bay lands. They wish their great father the President, and all the white people to know that Young King, Capt. Pollard, James Stevenson, Seneca White, Henry Two Guns, Capt. Strong, Destroy Town, Job Pierce, and William Patterson, are no longer Chiefs of the Seneca Nation, because they have acted contrary to the customs and practices of our people. The rule of the white people is, that a majority of their Chiefs, pass a law, and our rule is the same. It was for us to determine the question relative to the Green Bay lands; and we did determine to let them alone, and live on the seats we now own. These Chiefs, who are well known to the white people, have tried to make us act contrary to what the Council determined to do, and to violate the act of the Chiefs; and for this we put them down. We are on good terms with the State of New York, and no compulsion or persecution shall drive us from the lands we are seated upon.

Done at the Council on the Buffalo Reservation, this 31st day of July, 1833. Signed

| | |
|---------------------------|------------------|
| Big Kettle, | Gov. Blacksnake, |
| Jimmy Johnson, | James Robinson, |
| Little Johnson, | Samuel Gordon, |
| White Seneca, | George Red Eye, |
| John Snow, | Long John, |
| Green Blanket, | Blue Eyes, |
| Tall Peter, | Capt. Jones, |
| Doxtator, | Black Chief, |
| Tommy Jimmy, | Black Smith, |
| Daniel Two Guns, | Blue Sky, |
| Jack Berry, | Geo. Washington, |
| Mark Charles, | Samuel Parker, |
| Sky Carrier, | John Look, |
| John Hudson, | Jesse Stickney, |
| Two Guns, | John Na John, |
| George Kenjaktadeh, | Isaac Davis, |
| Jo Hemlock, | Levi Halftown, |
| Israel Jameson, | George Deer, |
| John Snow of Cattaraugus, | Jack Snow, |
| Capt. Snow, | John Cook, |
| George Bennett, | John Big Fire, |
| Young Chief, | John Beaver, |
| Tunis Halftown, | John S. Rey, |
| John Pierce, | John General. |

MARIE B. PIERCE, Interpreter.

AQUATICS.—The Regatta at Quebec, this season, appears to have excited universal interest, both among Canadians and strangers. The Governor General of Canada himself presided over the sports, and the display, both in rowing and yachting, was very fine, the British officers proving themselves, as usual, capital oarsmen. We should almost despair, in our plodding city, of getting up an affair half so splendid and dashing as that which has lately animated the St. Lawrence; but if the Quebec victors are in earnest in the generous threat held forth in the following paragraph from the Montreal Daily Advertiser, we do not despair of its being yet met in a decent way here. If "The Battery Boat Club" or "The Greenwich Rowing Club" cannot furnish oarsmen, Whitehall can at least supply that deficiency; should one or both of these Clubs get up the Regatta; and as for a boat, the builder of "the American Eagle" can launch as swift a craft as was ever pulled in any water;—so that if Major Jack Downing—(who, our Canadian friends may be aware, is at this moment one of the most distinguished characters in the country)—can only be prevailed upon to preside at the fête, old Hudson may shake his sides with glee at the gallant espers to be cut on his lordly bosom.

The Regatta.—The *Thames* boat, imported by the officers of the 32d Regiment, has maintained the character of its class. It has beaten the Greenock built boat hollow, though the latter was rowed by an excellent crew. It is understood the officers of the 32d Regiment intend to go to New York to try the Whitehall men; and as they have beaten a boat which beat the *American Eagle*, it is very doubtful whether New York can furnish a boat and crew to equal the *Thames* and its rowers.

BLACK HAWK AND HIS PARTY AT HOME.

We have been favored with the following letter from an intelligent correspondent, dated

FORT ARMSTRONG, Upper Mississippi, }
August 5th, 1833. }

The whole suite arrived here a few days since, loaded with assumed dignity and costly presents.

Keokuck's band speedily followed to welcome their brothers; a grand council assembled, among whom was myself, to witness the deliverance of the Hawk to his nation. The council opened with the address of the President to Black Hawk, in which he is informed that in future he was to yield supremacy to his inferior, Keokuck, the white man's friend.

The old chief rose, in violent agitation, denied that the President had told him so, and said that he would not be advised by any body; that he wanted what he said to be told to the President, and that he in person would have said so in Washington, but that his interpreter could not sufficiently make known his views. The colonel made to him a speech, stating that by his own treaty neither he nor his people could for the future head a band; and that by that treaty Keokuck was placed head of the Sac nation, &c.—Keokuck spoke awhile to the Hawk, then addressed the council, begged nothing might be remembered of what the Hawk said; that he was too old to say any thing good, and that he was answerable for his good behaviour. The poor old chief recalled his words, and I do not know that my sympathies were ever more excited than in witnessing his expiring struggle for freedom. Nothing but his advanced age, and want of military power will prevent him from making another effort. In the sequel, Keokuck's band gave us a splendid dance; but the Hawk's party were either too dejected or too sullen to participate in the festivities.

You may tell the good citizens of New York, these Indians would willingly get up another war in order to make another visit to the East and return loaded with presents and almost satiated with attention.—[Dai. Adv.]

FOREIGN INTELLIGENCE.

LATER FROM FRANCE DIRECT.—By the *Charlemagne*, which sailed from Havre on the 2d instant, we have Paris papers to and of the 1st. The only material intelligence is, that the anniversary of the Three Days passed off without troubles. The decision officially announced in the *Moniteur*, that the forts around Paris should not be proceeded with, without the sanction of the Chamber of Deputies, was struck off in a separate shape, and assiduously distributed among the National Guards, so as to check the cry they were expected to indulge in at the review, of "Down with the forts!"

As for the prospect of a war in Europe, it has been stated by Lord Palmerston in the House of Commons, that it is the manifest necessity of England to remain in a state of peace at every cost, except that of national honor, and that there is no prospect of war so long as France and England shall continue in alliance.

BRUSSELS, JULY 29.—Letters from the Hague confirm the reports that Holland demands an augmentation of our portion of the debt, and that it shall be carried to the amount of 12,000,000 francs of the interest; also that the capital should be invested; and finally an increase of the Intus for passing the Scheldt. It appears that the Treaty of Peace is to be negotiated first between Holland and the Five Powers, who will afterwards submit the terms to the approbation of Belgium.

The Jewish civil disabilities bill was passed by the House of Commons on the 22d July; by a vote of 169 to 32. In the course of the discussion, and in answer to an objection, that the Jews looked to Palestine as their country, and acknowledged no other, considering themselves always as a separate and distinct people—

Mr. Buckingham said, that having heard the argument repeatedly urged, that the Jews never became attached to any country, because they always expected to be restored to Jerusalem, he was anxious to inform the House of the result of his own observations on this point. He had been in Jerusalem, but he never heard of an English Jew having visited Palestine, even for the purpose of recreation; and the Jews residing there were subjected to so much ill-treatment, that it was their practice, as soon as they realized some little means, to escape from the country as fast as they could. (Hear, and laughter.)

Mr. Wilberforce, the friend of the black man, died on the 28th July.

LONDON, July 23d.—It was confidently stated in the City this morning that a treaty of alliance has been entered into between Lord Palmerston and the Duke de Broglie to recognize Queen Donna Maria immediately the constitutional troops take possession of Lisbon, and that the Ambassadors of her Majesty will be received officially by both Governments.

Donna Maria is expected in London from Paris in the course of this week on her way to Portugal.

Two eminent bankers of Paris and London have contracted a loan to a considerable amount, part of which will be directly forwarded to Oporto to pay up the arrears of pay due to the troops and sailors.

Marshal Bourmont had made an attack upon Oporto, and had been repulsed.

CONSTANTINOPLE, Aug. 10.—The Egyptian army having effected its retreat behind the Taurus, the Russian auxiliary forces have this morning left the roadstead of Bujukdere, to return to the Black Sea. The English squadron under Admiral Malcolm, which had appeared near the Dardanelles, left that station on the 2d inst. and sailed in the direction of Samos.

Dr. Schulz, who had been condemned to 16 years imprisonment by the Tribunal of the Isar, in Bavaria, for having distributed seditious writings, tending to the overthrow of the Government, has been acquitted by the Supreme Tribunal of Appeal, and set at liberty.

In the Federal Diet of Switzerland, July 8th, a resolution was passed, giving full powers to the Vorort, to continue his negotiations with the French Government for a return of the Poles into France.

The official journal of St. Petersburg contains the creation of a Russian Consulate at Havre, for that and the neighboring ports, and the appointment of M. Charles Stoffregen as Consul.

A Dutch Envoy was in Paris, for the purpose of demanding prior to a renewal of the negotiations at London, the restoration of the arms delivered by the prisoners of the citadel of Antwerp, in virtue of the capitulation. Government continued to hold out up to the latest dates, but it was supposed the arms would eventually be surrendered.

TURKEY.—The *Augsburgh Gaztte* contains the following, dated frontiers of Servia, June 10th:—"The 6th of June was a happy day for Servia. On that day Prince Milosh announced to his people the resolution of the Porte to cede to the Servians the six districts which were taken from them in 1813. This news was communicated officially to all the Servian authorities, and excited the greatest demonstrations of joy among the inhabitants. Now there remains nothing for the Servians to wish for, but that the Turks who are still residing in Servia may evacuate the country. Prince Milosh is negotiating to effect this, and it is expected that his efforts will soon have the desired result."

The product of indirect taxes in France for the first half-year of 1833, was 278,905,000 francs, being an increase of 10,975,000 upon the products of the same taxes in the first half of 1832.

It appears from the official accounts, that in the first six months of the present year, 630 vessels (French and foreign) entered, and 409 French vessels left the ports of France. Vessels merely sailing to or from ports in Europe are not included in these numbers.

PARIS, JULY 15th.—A few days ago a fire broke out at Corbie, near Amiens, which raged with such violence that, in an almost incredibly short period of time, no less than 55 habitations were consumed. Forty families are reduced to positive beggary.

All the arrangements for a daily mail between Paris and London had been completed, but they would not go into operation till the first of January 1834.

It is said that the King of Prussia, notwithstanding his promises, will not send a Charge d'Affaires to the King of Belgium.

Bill for the Abolition of Negro Slavery.—This bill provides, that from the first of November the slaves shall work ten hours a-day for six days in the week, and shall not be flogged or suffer corporeal punishment unless upon conviction before a Court of Justice, or a Magistrate.—That from the 1st of August, 1834, the system of apprenticeship shall commence; it shall be compulsory upon the slaves to be registered apprentices; the previous obligation of the master to maintain slaves in old age and illness to continue.—That at the expiration of eleven years from the 1st of Aug. 1834, all the slaves shall be entirely emancipated.—That the artisan and domestic slaves are to be entirely emancipated from their apprenticeship at the end of six years, whilst the sugar plantation slaves will have to continue their servitude to the end of the eleven years. The daily labour required from all, during their apprenticeships, will be the same—seven and a half hours each day.—That no portion of the Compensation fund shall be paid to the owners of slaves until satisfactory provision has been made to each colony for giving effect to the Act.—That the fund shall be apportioned into 16 shares, which are to be respectively assigned to the 16 different slave colonies, having regard to the number and sale price of slaves in each. The number of slaves in each is to be multiplied by the pounds sterling of their value, and the funds to be divided accordingly.

The workmen at Lyons had struck for higher wages, but their employers were firm in resisting their demands. Several large assemblages of operatives had taken place, but the public peace had not been disturbed.

A letter from Naples, dated the 30th ult., says: "The Count Hector de Lucchesi Palli has just arrived here, and is about to join the Duchess of Berry at Palermo. He has not yet obtained an audience of the King."

A conflict took place on the 12th, at Coote-hill, Ireland, between a party of Orangemen, and their opponents, in which four of the latter were killed, and a number on both sides wounded.

BRUSSELS, Wednesday Afternoon, July 24.

Long after the despatch of yesterday's courier the answer given at Laeken, and at the Palace of Brussels, to inquiries after the health of the Queen, was such as to make the announcement of this morning, however welcome and agreeable, a matter of surprise. The first intimation to the inhabitants of Brussels generally of her Majesty's accouchement was communicated at 6 o'clock by the guns on the Boulevards, with such an emphasis as to awaken the attention of the drowsiest inhabitant of the capital. So sudden and unexpected was the event, that the public functionaries who had been summoned to be present on the occasion, arrived one by one after all was over. Even the King was asleep at 4 o'clock, and at half-past 4 he was assured of his Queen's safety, and of the birth of a son,—a Prince, and heir to his honours and his throne. It had previously been arranged that a salvo of 21 guns should indicate the birth of a Princess, and 101 if a son and heir should be born. The gunners entrusted with firing the salute were observed to make a considerable pause after the 21st gun, for the purpose, no doubt, of piquing the curiosity of many an attentive listener, and making what was to follow more expressive; thus imparting to those mouths of fire, as they are called by the French, a figure of oratory which seems to have all the merit of originality.

The Queen of the French and the two Princesses, her daughters, are to remain here until after the baptism, which is to take place in Brussels on the 1st or 2d of Aug. The King of the French, as godfather, is to be represented by his second son, the Duke de Nemours; and in deference to the religious feelings of the people, if not to the rules of the Catholic Church, the Queen of the French is to officiate in person as godmother, instead of a proxy of her Royal Highness the Duchess of Kent, as had previously been announced.

The names to be bestowed on the infant Prince are Leopold Louis-Philippe Victor Ernest, after his father and grandfather, his cousin, the princess Royal of England, and his uncle, the reigning Duke of Saxe Cobourg.

The church bells of Brussels have been diligently proclaiming the event ever since six o'clock in the morning; preparations are every where making for a general illumination in the evening; and from the whole aspect of the town it appears that the entire population young and old, had resolved on a holiday extraordinary.

The Prince is to be created Duke of Brabant, and will be christened in the Catholic faith by the Archbishop of Malines.

[From the London Court Journal.]

MEMOIRS OF A DIPLOMATIST.

A Fragment from an Unpublished Work.

MADAME DE STAEL.—On entering the theatre on the following evening and on casting around me a glance of curiosity on the rows of boxes graced by all the beauty and fashion of Stockholm, I perceived a lady whose costume, physiognomy, and whole external appearance struck me as very extraordinary. Picture to yourself a clumsy figure—broad shoulders—nothing delicate or graceful—bold features, cheeks inflamed with rouge—a dress of the most glaring color—eyes sparkling with wit and vivacity—but every look of which might be taken for a provocation—black hair, regularly frised by force of art, and loaded with jewels. An enormous garland of variegated flowers encircled her head, surmounted by a plume of drooping feathers. Represent to yourself, by the side of this person, a young creature, tall and graceful, with a mild expression of countenance, dressed entirely in white, and whose golden hair fell in natural curls down her back, her only ornament her native simplicity and innocence, and you will form a perfect idea of the striking contrast between mother and daughter. We Swedes are so accustomed to the modesty of our own women, that the attitude of Madame de Staël appeared to us most singular. She had taken off her gloves—her body, half out of the box—animated by the most exalted enthusiasm, she gave with her hands, which were of the most dazzling whiteness and the most perfect shape, the signal of applause, at every marked passage. I observed her attentively, and her enthusiasm was not assumed; still her eyes were not irradiated with that pure exaltation which, under similar circumstances, I have seen in the intuitive looks of a German woman, whose aspect alone electrified me and elevated my mind.

At a subsequent period, I repeatedly heard Madame de Staël read, speak, and declaim; but in all that she said and did, I felt that she never forgot herself, and that she calculated beforehand the effect she was to produce. I was introduced to her the next day, and from that period I was in the habit of seeing her almost daily. Her deportment did not correspond with our Swedish ideas of propriety: she had a very pretty foot, but she was not satisfied with shewing it alone, but exhibited, likewise a well proportioned leg, with an 'abandon' that elicited many a joke at her expense.

Accustomed in France to warm herself at the chimney fire, she did not relinquish this favorite habit before our stoves, the doors of which are not very low, and it appeared to us to form an occasion for showing her foot. I was several times invited to meet her at dinner at the Prince Royal's. The play of her hands and arms seemed to me to be quite studied. She would sometimes lean both her elbows on the table, and declaim and gesticulate with so much fire, that her neighbors were obliged to be upon their guard. Her conversation sparkled with wit, but nevertheless became monotonous, because the greater part of the time she would speak alone, and the most frivolous topic became the subject of a profound dissertation. There was but one opinion throughout our salons, on the vast powers of her mind; but, at the same time, there was not one of us who would have wished to have such a mother, wife, or sister, as she. We looked upon her with astonishment; we admired her as a wonder, as a rare and unequalled phenomenon in the female world. Her vanity, however, received several severe checks at Stockholm. Our friend L—, for instance, obstinately refused to call on her, in spite of her reiterated and pressing invitations. 'I do not speak French well enough to maintain an argument in that language,' he replied; 'Madame de Staël is not content with a simple conversation.' Baron de Bejer, strolled acted much in the same manner. 'This woman,' said he, 'has probably come here to write a Swedish Maïa, as a pendant to her Italian Corinna; and I have no idea of going to sit for my picture.'

Madame de Staël read, at several of the Queen's soirées, some fragments of her then unpublished work on Germany. On one occasion she interrupted herself in the middle of a passage, and said to the Queen, 'Madame, peut elle bien me dire ce que c'est qu'une tragédie?' You may imagine her Majesty's embarrassment, on being called on for the first time in her life, to give such a definition. Madame de Staël maliciously enjoyed for some minutes the perplexity of the good old Queen; and then turning towards us, she discoursed so eloquently and profoundly on the nature and power of tragedy, and declaimed to us several celebrated scenes from the French tragic poets, with such impassioned energy, that I could have gone down on my knees before her. Still, had she at that moment have put to me the question she

formerly did to M. de Talleyrand, I should have answered her like that great diplomatist, 'Ah, Madame on m'a assuré que vous sachiez nager.'

What especially pleased me in Madame de Staël was her sound practical sense, and all the auxiliary means she brought into play to ensure the success of her plans. She solicited the rank of Major, for her youngest son, and was extremely offended because the Prince Royal gave him only a Lieutenant's commission. He was killed, a year afterwards, in a duel with a Russian officer. The parties quarrelled at the Baths of Doberan, while playing at faro. Young de Staël's death was preceded by a singular incident, and which may be cited as another example by those who believe in presentiments. The English Admiral, Moore, who had cast anchor in a neighboring port, came up to Doberan to pay his respects to the Grand Duke of Mecklenburg Schwerin. De Staël called upon him. The Admiral, who was intimately acquainted with Madame de Staël, advanced to receive him with warmth. Several persons present, however, observed that he started back with affright when De Staël held out his hand to him, and that he remained silent and melancholy while the interview lasted. One of my friends asked him the cause of his reserve: 'The sight of that young man,' said the Admiral, 'deeply affected me: he will meet a violent death, and that, too, very soon.' Eight days afterwards, young de Staël was no longer in existence!

Madame de Staël's eldest son wished to be attached to the Swedish Legation proceeding to the United States. There were some difficulties in the way, and the King, to whom his mother directly applied, flatly refused her: but she, nevertheless, succeeded, with an address that astonished our oldest courtiers. Augustus William Schlégel also obtained an appointment in the Swedish service. Rocca, who passed generally for Madame de Staël's lover, was the only one for whom she solicited nothing. He was beautiful as a Grecian statue, but in other respects insignificant. He, however, appeared passionately fond of this celebrated woman; and her soul of fire, perhaps, experienced an indescribable felicity at feeling herself beloved in the autumn of her days with all the passion of youth.

In spite of these slight shades, Madame de Staël was one of the most grandiose and wonderful apparitions of her age. She gave, at Stockholm, multiplied proofs of her liberality, and of the nobleness of her mind; and relieved the poor relations of her deceased husband with a delicacy that enhanced the price of her favors.

THE BLACK DEATH.—This book, with such a fearful title, is translated from the German of the celebrated Hecker, by Dr. Babington, and gives an account of the ravages of that fearful pestilence which raged in Italy and throughout Europe, in the time of Boccaccio. A more interesting work we have never met with.

In many places, it was rumored that plague patients were buried alive, as may sometimes happen through senseless alarm and indecent haste; and thus the horror of the distressed people was every where increased. In Erfurt, after the church-yards were filled, 12,000 corpses were thrown into eleven great pits; and the like might, more or less exactly, be stated with respect to all the larger cities. Funeral ceremonies, the last consolation of the survivors, were every where impracticable.

In all Germany, according to a probable calculation, there seem to have died only 1,244,434 inhabitants; this country, however, was more spared than others: Italy, on the contrary, was most severely visited. It is said to have lost half its inhabitants; and this account is rendered credible from the immense losses of individual cities and provinces: for in Sardinia and Corsica according to the account of the distinguished Florentine, John Villani, who was himself carried off by the black Plague, scarcely a third part of the population remained alive; and it is related of the Venetians, that they engaged ships at a high rate to retreat to the islands; so that after the plague had carried off three fourths of her inhabitants, that proud city was left forlorn and desolate. In Padua, after the cessation of the plague, two thirds of the inhabitants were wanting; and in Florence it was prohibited to publish the numbers of the dead, and to toll the bells at their funerals, in order that the living might not abandon themselves to despair.

We have more exact accounts of England; most of the great cities suffered incredible losses; above all, Yarmouth, in which 7052 died: Bristol, Oxford, Norwich, Leicester, York, and London, where, in one burial ground alone, there were interred upwards of 50,000 corpses, arranged in layers, in large pits. It is

said, that in the whole country, scarcely a tenth part remained alive; but this estimate is evidently too high. Smaller losses were sufficient to cause those convulsions, whose consequences were felt for some centuries, in a false impulse given to civil life, and whose indirect influence, unknown to the English, has, perhaps, extended even to modern times.

The changes which occurred about this period in the north of Europe, are sufficiently memorable to claim a few moments attention. In Sweden, two princes died—Haken and Kaut, half brothers of King Magnus; and in Westgothland alone, 466 priests. The inhabitants of Iceland and Greenland found in the coldness of their inhospitable climate, no protection against the southern enemy who had penetrated to them from happier countries. The plague caused great havoc among them. Nature made no allowance for their constant warfare with the elements, and the parsimony with which she had meted out to them the enjoyments of life. In Denmark and Norway, however, people were so occupied with their own misery, that the accustomed voyages to Greenland ceased. Towering ice-burys formed at the same time on the coast of Greenland, in consequence of the general concussion of the earth's organism; and no mortal, from that time forward, has ever seen that shore or its inhabitants.

It may be observed, that in Russia, the Black Plague did not break out until the year 1361, after it had already passed through the south and north of Europe. In this country also, the mortality was extraordinarily great; and the same scenes of affliction and despair were exhibited as had occurred in those nations which had already passed the ordeal. The same mode of burial—the same horrible certainty of death—the same torpor and depression of spirits. The wealthy abandoned their treasures, and gave their villages and estates to the churches and monasteries; this being, according to the notions of the age, the surest way of securing the favor of Heaven, and the forgiveness of past sins. In Russia, too, the voice of nature was silenced by fear and horror. In the hour of danger, fathers, and mothers deserted their children, and children their parents.

Of all the estimates of the number of lives lost in Europe, the most probable is, that altogether, a fourth-part of the inhabitants were carried off. Now, if Europe, at present contain 210,000,000 inhabitants, the population, not to take a higher estimate, which might easily be justified, amounted to at least 105,000,000 in the sixth century.

It may, therefore, be assumed, without exaggeration, that Europe lost during the Black Death—25,000,000 of inhabitants.

Marriage of Catholic Priests.—The question of the right of Catholic priests to contract matrimonial engagements in France is about to be tried in a way which will probably set it to rest. M. Leloup, a priest of the newly established 'French Catholic Church,' has made application to the Mayor of his arrondissement that his bans of marriage may be published in the usual way. The Mayor has required time to consider the application, and take legal advice. As it has been already settled in France that the marriage of a priest is valid, because there is no law in the civil code that forbids it, the Mayor will probably do as he has been requested by M. Leloup, and the marriage may take place. But should the Mayor refuse to publish the bans, M. Leloup intends in that case to bring the matter before a court of law. It is to be remarked, however, that M. Leloup, though a Roman Catholic priest, originally ordained in the usual way, now belongs to the new sect which do not acknowledge the laws of the Romish Church. But the effect, in the course of a few years, will be to convert the greater part of the Catholic priests and Catholic Christians in France to the faith adopted by the new sect, whose followers have been greatly increasing in numbers for some time past. This 'French Catholic' religion will become the religion of the country, and the small remnant of the Pope's authority which exists at present, will be made to disappear as completely as the progress of the reformation has made it disappear in Great Britain. Religion has suffered in France on account of its close connexion with the Church of Rome and with the Jesuits, and because the rulers of the country had always contrived to make it an instrument for the better subjection of the people; but now that they see a church established among them for no other object than the promotion of religion itself, and entirely free from political connexion, the French people appear disposed to rally round that church and make it prosper. (Letter from Paris.)

Progress of Civilization in Algiers.—The influence of the Turks has long been declining in Algiers. But there are few Moorish families not connected in marriage with the public functionaries sent thither from time to time from Constantinople. Their descendants are denominated Coulouglis, and have always enjoyed particular privileges. The families connected with them have been enriched, but the source of wealth, which consisted in piracies upon the coast of Spain and Italy, has been stopped during many years; and Lord Exmouth put an end to Christian slavery in 1816; while various treaties with Europe decidedly checked the former irregular warfare and weakened the Turks. In this state of things we found the Moors ready to receive us as liberators. Our manners and refined habits were more pleasing to them than those of the Turkish soldiery. They have not forgotten Spain and its enchantments. Their countenances and gestures, and their whole demeanour, are strikingly Spanish. One of them, Sidi Bou Dharba, told me one day, that by his mother's side he was descended from the Moors of Granada. I have often played at whist, or écarté, with these pretended barbarians, and found myself in enlightened discussion upon the comparative merits of European and Moslem manners. Their dwellings are fitted up with great luxury. At the country house of Sidi Hamedan, whose eldest son was educated at Paris, are to be seen all the resources of a man of taste, a library, and a garden laid out in the English style. Polygamy is almost unknown at Algiers. The women have much more freedom than in other Mohammedan countries. They have the exclusive management of the house, and pay much attention to the education of their children. The Algerines are fond of music, and offered to contribute towards the expense of a theatre. Many of them speak French, Italian, Spanish, and English. And what seems decisive as to the civilization of the Moors, they possess a great number of schools conducted upon the Lancaster and Bell systems of mutual instruction; and primary instruction is more general than in France. It is a great error to suppose them hostile to our more enlightened views.—[Westminster Review.]

Italian Fig-Tree.—Among the time-worn ruins of the ancient castle at Reculver, in the island of Thanet, which forms part of the county of Kent, an ancient fig-tree stretches forth its venerable arms to the breeze, and attracts the attention of the visitor, not more by the venerable aspect it presents, than by the historical records with which it is connected. This tree, according to the traditions of the neighborhood, claims Italy for the soil of its nativity, and Roman hands for those of its first planters; its age, consequently, cannot be less than from 1345 to 1888 years, the Romans having first landed at Deal in the summer of the 55th year before the birth of our Saviour, 1888 years ago, and finally quitted Britain in the year of our Lord 488, 1345 years ago. Could this patriarchal tree but relate the various changes it has seen, and the political, as well as physical, convulsions it has experienced, what an eventful history it could furnish!

Parisian Manufactures.—One of the most positive signs of the present improving state of France is the amount of the duties of manufactured articles in gold and silver. This manufacture is almost exclusively confined to Paris, and of all articles of luxury these are always the first to feel the effect of any political or commercial crisis, and the last to revive with the return of peace and prosperity. The following is a statement of the produce of those duties during the last three years:—1830—First six months, 529,040*f*; second six months, 304,935*f*. 1831—First six months, 258,439*f*; second six months, 368,798*f*.—1832—First six months, 330,721*f*; second six months, 454,980*f*. The first six months of the present year have produced 490,854*f*. Thus it appears that the manufacture was less in the first half year of 1831 than immediately after the days of July; and, on account of the repeated disturbances, did not begin to revive until the measures of the Government had restored the country to security and confidence. Relaxed again by the Cholera and the events of June in last year, it resumed fresh vigor in the second half of the year, and during the last six months has reached a point almost equal to the maximum for many years. Such facts as these are the best answer to those who deny that industry and commerce have improved.—[Journal de Paris.]

Turkish Soldiers.—The first sound that now strikes a stranger on entering the city is that of a fine military band, and the first sight is a regular regiment marching through the streets. If he goes in the morning or evening to a public parade, he will see soldiers drawn out in line, regularly exercised

and hear excellent music, to which groups of well-dressed people are listening while they walk up and down. 'Tis true there are many things in this approximation to European usage which still remind him that he is not at the Horse Guards or the Castle-yard. The soldiers appear to have no shirts; they are not yet reconciled to the restraint of a stiff black stock, and the shoes which they have taken in exchange for slippers are not in the neatest order; the greatest number are down at the heels as if they were still slippers, and they are all dirty as if they had never been cleaned. Every man gets brushes for the purpose, but they have not yet been reconciled to them. Some orthodox on-bachi suggested that they were made of *hog's bristles*, and they thought the hair of this unclean animal would only defile them still more.—[Dublin University Magazine.]

Manner of naming Countries.—The origin of the word Canada is curious enough. The Spaniards visited that Country previous to the French, and made particular searches for gold and silver, and finding none, they often said among themselves, "aca nada" (there is nothing here). The Indians, who watched them closely, learnt this sentence and its meaning. After the departure of the Spaniards the French arrived, and the Indians, who wanted none of their company, and supposed they also were Spaniards, come on the same errand, were anxious to inform them that their labour was lost by tarrying in that country, and incessantly repeated to them the Spanish sentence "aca nada." The French, who knew as little of the Spanish as the Indians, supposed this incessantly-recurring sound was the name of the country, and gave it the name of Canada, which it has borne ever since.

Drum Ecclesiastic.—"Ah, Sir!" exclaimed an elder, in a tone of pathetic recollection, "our late minister was the man! He was a powerful preacher, for in the short time he delivered the word among us, he knocked three pulpits to pieces, and dung the inside out o' five bibles!"

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Superintendent of Construction of the Baltimore and Ohio Railroad.

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WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833.
To Messrs Ewing and Heartte.—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

E. B. LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of pursuing the same.

POETRY.

[For the American Railroad Journal.]
TO THE GOVERNESS OF

When lowing herds have reached their home,
And clarian ceased to crow,
And faintly doth the silver moon
Her wonted light bestow,—
Then, fairest, rove with me.

When clearly doth the evening star
Delight each wandering eye,
And here, and on the waters far,
Smiles peace and jollity,—
Then, loveliest, rove with me.

When even the watch-dog, honest like,
Breathes loudly his distress,
And only some small fly disturbs
The universal rest,—
Then, dearest, rove with me.

When all the lights of earth are dark,
The lights of heaven all gay,
And thy soft whisper may be heard,
More than thy voice by day,—
Then, sweetest, rove with me.

I'll tell thee—O! that I could tell
What my heart prompts me to!
But thou wilt read it in my look—
How plain, and ah! how true.
O, thou wilt rove with me!

New-London, 19th August, 1833.

SUMMER'S GONE.—By Mrs. Norton.

Hark, through the dim woods dying,
With a moan,
Faintly the winds are sighing—
Summer's gone!
There when my bruised heart feebleth,
And the pale moon her face revealeth,
Darkly my footsteps steal
To weep alone.
Hour after hour I wander,
By men unseen—
And sadly my wrung thoughts ponder,
On what hath been,
Summer's gone!

There in our own green bowers
Long ago,
Our path through the tangled flowers
Threading slow;
Oft hand in hand entwining—
Oft side by side reclining—
We've watched in its crimson shining
The sunset glow.

Dimly the sun now burneth
For me alone—
Spring after spring returneth,
Thou art gone,
Summer's gone!

Still on my warm cheek playeth
The restless breeze:
Still in its freshness strayeth
Between the trees.

Still the blue streamlet gusheth—
Still the broad river rusheth—
Still the calm silence husheth
The heart's disease:

But who shall bring our meetings
Back again?
What shall recall thy greetings—
Loved in vain!
Summer's gone!

MARRIAGES.

On Thursday evening, 23d inst. by the Rev. Mr. Griffin, Mr. John Walker, to Miss Amelia Oldershaw, daughter of J. H. Oldershaw, all of this city.

On Monday, 5th inst. by the Rev. Dr. Phillips, Geo. H. Kelsey, of Charleston, S. C., to Charlotte H., youngest daughter of the late Genl. Nathaniel Coles, of Dorchester, L. I.

At Jamaica, L. I. on Thursday, Aug. 22, by the Rev. Wm. L. Johnson, HENRY VAN RENSSLAER, of Albany, to ELIZABETH EAY, daughter of JOHN A. KINS, Esq.

At Montgomery, Orange Co., on Saturday evening, 10th inst. by the Rev. Mr. Blain, Mr. WILLIAM D. HART, to Miss SARAH ANN BELL, both of that village.

At Delhi, on the 15th inst. by the Rev. Orange Clark, HENRY L. ROBINSON, son of the Hon. Tracy Robinson, of Broome co., to ELIZABETH, daughter of General Erastus Root.

At New-Haven, on Wednesday the 14th inst. by Elias M. Esq. Col. GEORGE WARD, of the city of New-York, to Mrs. CHARLOTTE TUTTLE, of the former place.

At Elizabethtown, N. J. on Friday evening last, by the Rev. Wm. A. Wilmer, John W. Hoyt, to Olivia Griffith.

DEATHS.

On Thursday morning, the 22d instant, Mr. JOHN AIKMAN, in the 75th year of his age.

Tuesday, 27th inst. Mrs. ELIZABETH, wife of Mr. A. H. Kimmel, and daughter of Mr. Henry Valentine.

On the morning of the 26th instant, MARY MOONEY, wife of Walter Mooney, in the 23d year of her age.

At Jamaica, L. I. on Saturday evening, ROBERT BESSON, aged 57 years.

At his residence, Staten Island, on Sunday, August 25th, DANIEL CRACKENBURY, Esq. after a lingering illness.

At Pompton, N. J. on Tuesday, 30th instant, Sarah Catherine, daughter of James Wheeler, Esq. of Warwick, Orange county, N. Y.

At Bridgeport, Ct. on the 17th inst. Mr. ASA BENJAMIN, in the

70th year of his age. He was one of the remaining few, who, during our revolutionary struggle, stepped forth in defence of our country and the great cause of liberty. Since that period he has resided in his native state, where the excellence of his heart, his strict integrity, his blandness and affability of manners, and his kindness to his fellow men, gained their universal respect and esteem. He will long be affectionately remembered by his relatives and numerous friends.

On the 30th July, Mrs. MARIA ELIZABETH PIERCE, consort of Jeremiah L. Pierce, of Cincinnati.

At Nashville, Tenn. on the morning of Tuesday, 13th August, WILLIAM GIBBS HUNT, Esq. Editor of the National Banner, a native of Boston, aged 42 years and 6 months.

At Jacksonville, Illinois, the 9th instant, Dr. ALDIS S. ALLEN, of Bridgeport, (Conn.) he with his wife on their return, home, from a tour through the Western States, where he was taken sick and died of bilious fever.

AN INTERESTING AND USEFUL MAP.

A friend of ours has now in a state of forwardness, a Map of that section of the United States north of the Potomac and east of Lake Erie, upon which will be delineated all the RAILROADS now chartered, and in contemplation, as far as can be ascertained. It is designed to show the present contemplated connexion of the different lines, as well as where others may hereafter be constructed to connect with them. It will be completed in a few weeks, and may be had either in sheets, or put up in morocco for pocket maps, in any quantity, by applying to the subscriber.

D. K. MINOR.

New-York, August 14, 1833.

G. LANSING, Engraver on Wood,
35 WALL STREET.

✂ All kinds of Machinery correctly drawn, and neatly engraved. m4

NOTICE TO MANUFACTURERS.

SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nail with square points. This machine will make about sixty 60 nails, and about forty 100 nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.

August 15, 1833.

A29 if R J. M M & F

AMERICAN INSTITUTE.

THE Sixth Annual Fair of the American Institute will be held in the city of New-York, at Masonic Hall, on Tuesday the 16th of October next, and continue three days. Premiums, consisting of Diplomas, or Medals, will be awarded, as usual, for such articles of American production, as shall be adjudged superior, either in material or workmanship.

As a new impetus seems to have been lately given to American Industry, it is confidently expected that the Fair announced for October next, will present still more decisive evidence of the advancing condition of our agriculture, our manufactures, and the arts, than any of those which have preceded it.

Such ingenious and useful machinery as may be conveniently transported, and put in operation, will give interest and spirit to the occasion.

Each article should be labelled with the name of the manufacturer, or producer, and with the agent's name, and number, in this city.

The design is to inform buyers where they can supply themselves with the best articles. In this way, by means of former Fairs, many excellent workmen have become better known and have obtained permanent and profitable customers, who, while they have been better served, have at the same time rewarded and stimulated American skill and industry.

Articles entered for premiums must be delivered as early as Monday, the 14th of October.

More particular notices will be published previous to the Fair. For any other information which may be desired, apply to either of the Managers, in person or by letter.

JAMES LYNCH.

ANDREW WILLIAMS.

EDWARD T. BACKHOUSE.

CLARKSON CROLIUS, Jr.

WM. F. PHYFE.

JOHN SAMYSON.

JOSEPH TITCOMB.

JARED L. MOORE.

GEORGE BACON.

Managers.

New-York, July 4th. 1833.

A29 if R J. M M & F

RAILWAY IRON.

Ninety-five tons of 1 inch by 1 inch,
200 do. 1 1/2 do. do.
40 do. 1 1/2 do. do.
800 do. 2 do. do.
800 do. 2 1/2 do. do.
soon expected.

Flat Bars in lengths of 14 to 16 feet counter sunk holes, ends cut at an angle of 45 degrees with splicing plates, nails to suit.

250 do. of Edge Rails of 35 lbs. per yard, with the requisite chairs, keys and pins.

The above will be sold free of duty, to State Governments, and Incorporated Governments, and the Drawback taken in part payment.

9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them.

as 4mcowr

FOR SALE.

ATLANTIC JOURNAL AND FRIEND OF KNOWLEDGE—A Quarterly Journal, by Professor Radnesque, of Philadelphia, begun in the spring of 1832, with wood cuts, &c. dedicated to Historical and Natural Sciences, Botany, Agriculture, &c. at one dollar per annum.

MEDICAL FLORA OF THE UNITED STATES, in 2 vols. with 100 plates, containing also the economical properties of 300 genera of American plants. \$3.

MANUAL OF AMERICAN VINES, and Art of Making Wines, with 8 figures. 25 cents.

FISHES AND SHELLS OF THE RIVER OHIO. 1 dollar.

AMERICAN FLORIST, with 35 figures—price 36 cts.

. Orders for these works, or any other of Professor Radnesque's, received at this office.

A9 if J M & F

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads,
No. 224 Elizabeth street, near Bleeker street,
New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad, now in operation.

335 if

RAILROAD CAR WHEELS AND BOXES,
AND OTHER RAILROAD CASTINGS.

Also, AXLES furnished and fitted to wheels complete, at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to.

J8

ROGERS, KETCHUM & GROSVENOR.

PATENT RAILROAD, SHIP AND BOAT SPIKES.

The Troy Iron and Nail Factory keep constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 16 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation and now almost universal use in the United States (as well as England, where the subscriber obtained a Patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersink heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

All orders directed to the Agent, Troy, N. Y., will be punctually attended to.

HENRY BURDEN, Agent.

Troy, N. Y. July, 1831.

Spikes are kept for sale, at factory prices, by I. & J. Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. I. Brower, 229 Water street, New-York; A. M. Jones, Philadelphia; T. Janvier, Baltimore; Degrand & Smith, Boston.

P. S.—Railroad Companies would do well to forward their orders as early as practical, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.

J23 lam

H. BURDEN.

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,

Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,

JAMES P. STABLER, Superintendent of Construction of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.

E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.

Germantown, and Norristown Railroad

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